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THE LANGUAGES OF AUSTRALIA

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A NOTE TO THE READER

This book is primarily written for an Australian audience – students of linguistics, and also people with little or no training in linguistics who are interested in the nature and structure of Aboriginal Australian languages, their paths of evolution, and their conditions of use. With this group of readers in view, an attempt has been made to keep the text comprehensible by explaining basic linguistic terms – such as 'phoneme' and 'lexeme' – at their first mention, and by comparing Australian sounds and grammatical patterns with those of English. A glossary of technical terms is also provided. People who have taken an introductory course in linguistics, or who have studied an introductory text on linguistics (see Suggestions for further reading) will derive maximum value from the book, but the intelligent layman with no previous knowledge of linguistics should find at least chapters 1–5, 8 and 9 of interest.

The general linguistic reader should also find the book of interest, if he is prepared to exercise forbearance and skip over the explanations of familiar terms (with which he may not, in any case, agree in detail); these do comprise just a small portion of the book.

It may be useful to indicate which parts of the book are likely to be of interest to the different types of reader:

(a) *The general reader*, who has minimal acquaintançeship with linguistic ideas and terminology; I have in mind here teachers, social workers, social scientists, and in fact any white or black Australian with an enquiring mind and an interest in finding out about Australian languages. I recommend, for a first reading:

chapters 1–4, for an account of the anthropological, sociolinguistic and historical background;

then chapter 9, for an overview of Australian grammars and explanation of terms such as 'ergative';

then chapter 5, on vocabulary (perhaps skimming parts of 5.1);
then chapter 8, on genetic and areal relationships (perhaps skimming 8.4);
then pages 125–50 of chapter 6, for an introduction to the significant sound contrasts in Australian languages;
then chapter 10 (especially sections 10.1 and 10.2) for a survey of case marking on nouns.

Other chapters contain more technical material which the non-specialist reader could well pass over on a first run through the book.

(b) *The general linguist*, who has little knowledge of Australian languages, could omit the first couple of pages of chapter 5 and also of chapter 6, and could skim quickly over 6.3, 6.4.1, and the first few pages of chapter 9. A quick typological picture of Australian phonologies and grammars can be obtained from 6.1–6.4; chapter 9; the early parts of chapters 10, 11 and 12; and chapter 13. Historical changes are covered in chapter 7 and the remaining portions of 6, 10–12. The sociolinguistic and semantic background is sketched in chapters 2–5, while the genetic picture is discussed in chapter 8.

(c) *The student of Australian languages* will be familiar with most of the material in the introductory chapters and with a good deal of the typological sketch. Main interest is likely to centre on the proposed reconstruction of proto-Australian phonology and morphology, in the later parts of chapters 6, 10, 11 and 12; and also in the discussion of the genetic status of typological groupings (such as Pama-Nyungan) in chapter 8. This is almost all new material which, hopefully, will stimulate debate and argument.

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PREFACE

This book is, in several ways, premature. I had intended to write a volume of this type, but in about ten years' time, waiting until more information had been published on Australian languages, and, particularly, until after a serious attempt had been made to see whether any higher-level subgrouping within the Australian family is possible (see 8.5). However, Jeremy Mynott of Cambridge University Press persuaded me that a preliminary survey should be published now; this would provide guidelines that could assist linguists working on Australian languages during the next decade, it would fill a long-felt need by making material on Australian languages available to linguists specialising in other areas, and it could fill an even more important gap by providing an account of Australian languages that would be of interest to non-linguists within the Australian community.

This should, then, be regarded as a tentative survey of our present knowledge of Australian linguistics, together with some hypotheses concerning the structure of the putative ancestor language, proto-Australian, and the development of modern languages from this base. There is a great deal of work in progress on the description of Australian languages; when this is made available it may well lead to some reassessment and rethinking of the ideas in the present book. It may be that further work will show that aberrant languages such as Tiwi and Djingili are genetically related to the remaining languages of the continent, something that is not at present clear. I believe – indeed, hope – that this volume will before long be superseded by a fuller and better survey; if it asks the questions and elicits the data which will lead to a more definitive study of the Australian language family it will have succeeded in its aims.

Although parts of it are quite technical, the book is not conceived of as an entirely academic undertaking. In particular, attention is drawn to the present statuses of Australian languages and their chances of survival in the present political climate. The introduction of bilingual education in some parts of the continent is applauded, and guidelines for its implementation suggested.

I have chosen to write plainly, to talk of the white 'invasion' of Aboriginal Australian lands, avoiding euphemisms such as 'settlement', and not to gloss over murder – of people, tribes and languages. There is little comment in this book on current attitudes towards Aboriginal Australians; in many parts of the continent these are only marginally better than at many times in the past.

The unsatisfactory nature of recent classifications and surveys of Australian languages is commented on in 8.6. These have been the only statements generally available and they have, as it were by default, acquired a certain currency. They do not stand up under any serious examination.

The main contribution of this book, as I see it, is to provide the beginnings of a proof that all the languages of Australia (except perhaps two or three northern tongues such as Tiwi and Djingili) are genetically related. There is no fixed procedure for reconstruction. Careful comparison – of which a representative sample is given here – can suggest an hypothesis concerning the proto-system; the ways in which this developed into the various modern languages can then be described. Chapters 6, 10, 11 and 12 set out what seems to me to be the best integrated hypothesis that will account for the data presently available. It is incumbent on any scholar who does not accept this to propose an ALTERNATIVE hypothesis of the structure of proto-Australian, and show how this explains the facts of modern grammars and phonologies BETTER than does my hypothesis.

The term 'grammar' is used in the accepted European sense, in which it includes morphology and syntax and is complementary to phonology; this differs from the predominant American usage in which 'grammar' is taken to subsume phonology as well.

State boundaries and cities in modern Australia, and the location of geographical regions that are referred to in the text, are shown on map 1. The approximate locations of all languages mentioned are shown on map 2. Sources for quotations and parenthetical comments are given at the end of the book in 'Notes and references'. A list of references to each language, together with full information on sources, is in the 'Languages and sources' section. An attempt has been made to cross-reference all relevant publications on each topic discussed, so that interested readers may investigate them in more depth than my space here has permitted.

I have tried to provide exemplification from a wide selection of languages, covering all parts of the continent, although I have been limited by the absence of reliable descriptions of languages in certain regions. On some topics – dialect grouping, and the structure of the lexicon, for example – little has been published, and here I have had to fall back on those languages that I have worked on intensively myself (Dyirbal, Yidiny, Warrgamay, Nyawaygi and Mbabaram).

Much of the research for this book was supported by grants A70/17428–9, A77/15446 from the Australian Research Grants Committee, over the period 1971–9. Work is continuing, under ARGC auspices, on a full classification and subgrouping of Australian languages.

It will be obvious how much the author of a study such as this depends on the goodwill and assistance of colleagues and students. Most of the ideas in chapters 6–13 were worked out and gradually refined while I was teaching a full-year course 'Australian linguistics' at the Australian National University in 1972, 1974, 1975 and 1977; the students in these courses contributed immeasurably to the advancement of my understanding of comparative Australian linguistics. It is likewise impossible to overstate all that I have learnt about particular Australian languages – and the general insights I have gained – from the graduate and advanced undergraduate students working on Australian topics whom I have had the good fortune to supervise over the past eight years – Peter Austin, Sarah Brasch, Helena Cassells, Terry Crowley, Tamsin Donaldson, Diana Eades, Jennifer Lee, Graham McKay, Frances Morphy, Elizabeth Patz, Bronwyn Stokes, Michael Walsh and Corinne Williams.

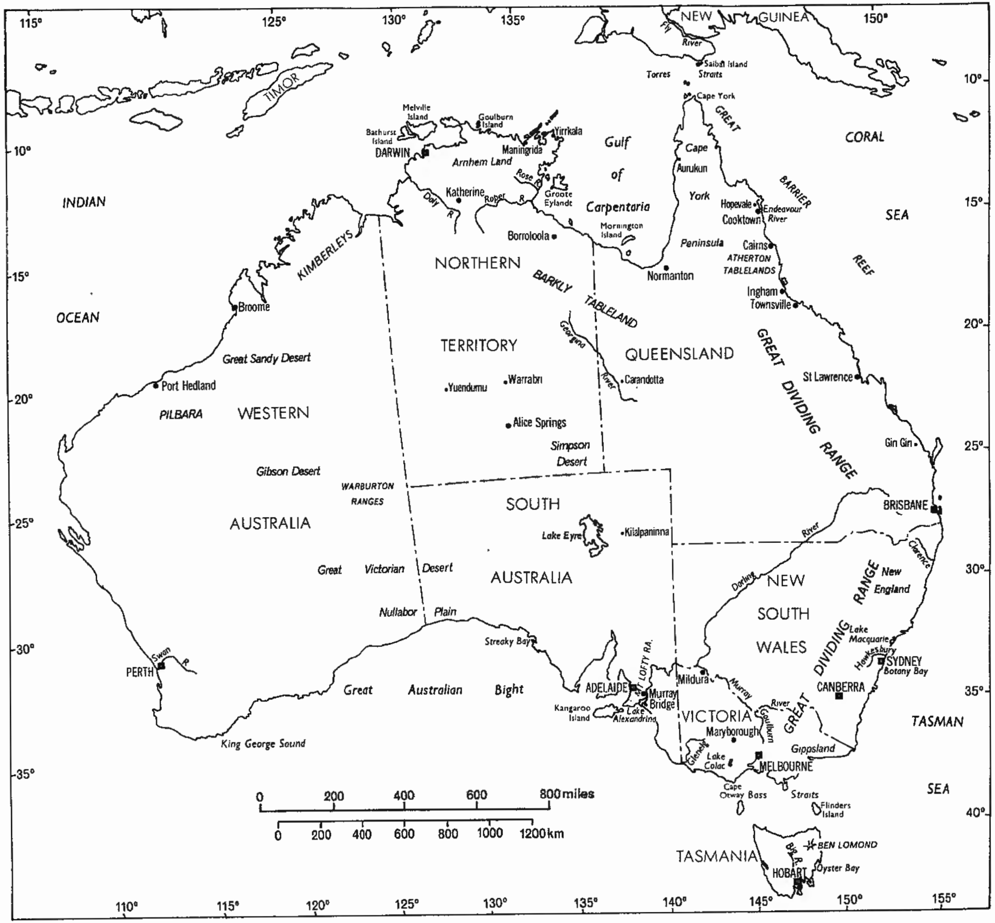
I owe a considerable debt, for the data and discussion they have helped with and/or for comments and criticisms on draft chapters, to Barry Alpher, Avery Andrews, Wendy Baarder, Diane Bell, Jo Birdsell, Peter Busby, Arthur Capell, Peter Carroll, Neil Chadwick, Michael Christie, Bernard Comrie, Karen Courtenay, Wilf Douglas, Vanessa Elwell, Kevin Ford, Amée Glass, Cliff Goddard, Ian Green, John Haviland, Luise Hercus, Henry and Ruth Hershberger, Joyce Hudson, Ian Keen, Sue Kesteven, Christine Kilham, Jean Kirton, Terry Klokeid, Grace Koch, Peter Ladefoged, Mary Laughren, Velma Leeding, Beulah Lowe, Patrick McConvell, Maryalyce McDonald, Mervyn Meggitt, Francesca Merlan, Howard Morphy, Alice Moyle, John Mulvaney, Geoff O'Grady, Gnani Perinpanayagam, John Platt, Bruce Rigsby, Margaret Clunies Ross, Jane Simpson, Judith Stokes, David Thompson, Norman Tindale, Jim Urry, Bruce Waters, Anna Wierzbicka, David Wilkins, Frank Wordick, Stephen Wurm, David Zorc and students at the School of Australian Linguistics, Bachelor, Northern Territory.

Peter Austin, Paul Black, Barry Blake, Gavan Breen, Diana Eades, Ken Hale, Jeffrey Heath, George Huttar, Harold Koch, John Lyons, Graham McKay, Frances Morphy, David Nash, Alan Rumsey, Tim Shopen and Peter Sutton each read through the whole of the final draft, corrected many errors, suggested improvements, and supplied additional data. Without their help and encouragement I should have hesitated to publish the book. As it is I must first thank them, and then apologise that I did not follow all their suggestions and especially that I could not include more than a fraction of the examples they supplied; the book was already almost twice as long as the publisher (and I) would like. Val Lyon drew the maps, and Ellalene Seymour and Sandra Bell typed several drafts with cheerfulness, patience and efficiency; thanks are due equally to them.

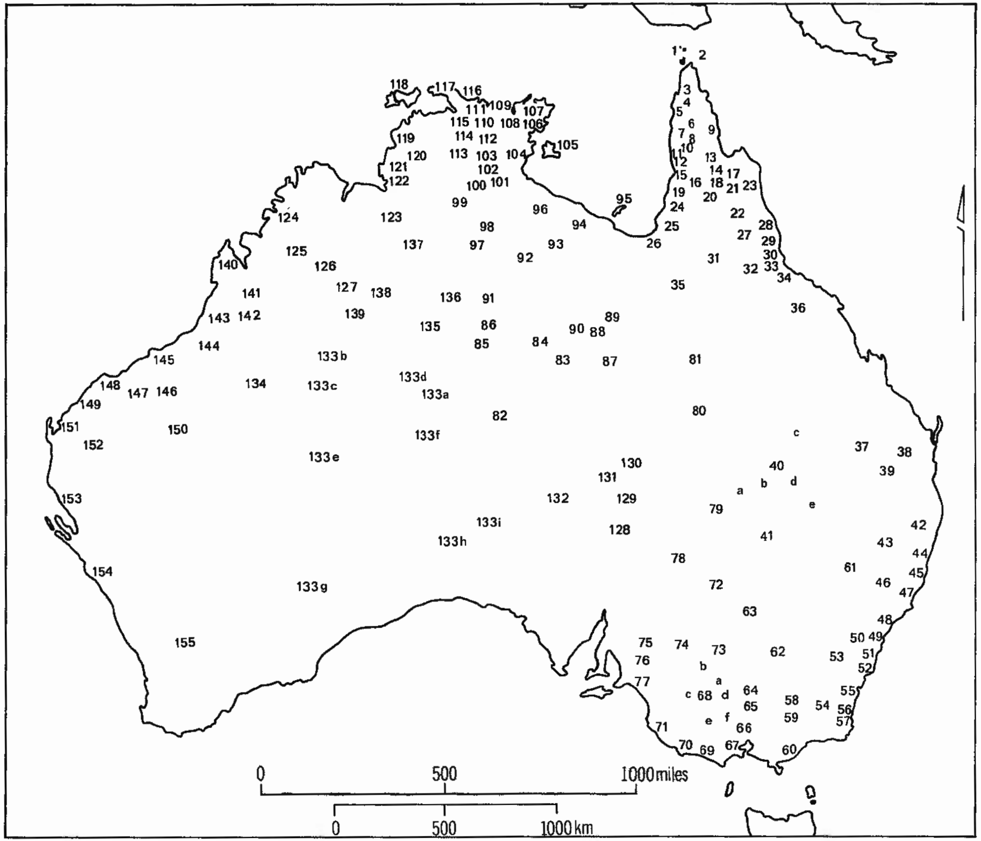
The existence of this book, and many of its better points, are due directly to the publisher's editor and sub-editor. Jeremy Mynott persuaded me to write a book of this nature; provided the title; made invaluable suggestions concerning organisation, content and style; and displayed calm and forbearance at my temper tantrums during the process of birth. Penny Carter checked the manuscript with care and intelligence, correcting many errors and inconsistencies and making a number of helpful suggestions.

My foremost debt is to those Australians who shared the beauty of their native languages with me, especially to George Watson, Mollie Raymond, Willie Seaton, John Tooth, Lambert Cocky, Mick Murray, Jack Muriata, Bessie Jerry, George Davies, Katie May, Ranji Fuller, Pompey Langdon and to the late Chloe Grant, Dick Moses, Tilly Fuller, Nora Boyd and Albert Bennett. This is the sort of book they always thought I should write; I hope that it is in some way worthy of them.

Canberra
April 1979



Map 1. State boundaries, major cities and geographical regions



Map 2. Approximate locations of languages referred to

Key. A single number is used for each language; the location of dialects is shown only for Margany, Wemba-Wemba and Western Desert. Full details of groupings are in the 'Languages and sources' section.

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ABBREVIATIONS AND ORTHOGRAPHY

Most sentential examples are provided with an interlinear gloss, in addition to English translation of the complete sentence. In this, lexical items are given in lower case and grammatical elements in small capitals, as 'woman-ERG'. For the latter the following abbreviations are used:

A	transitive agent function
ABL	ablative case
ABS	absolutive case
ACC	accusative case
ACCES	accessory case
ALL	allative case
ANTIPASS	antipassive verbal derivational suffix
AUX	auxiliary verb
AVERS	aversive case
CAUS	causal case
COMIT	comitative affix
CONTIN	continuative affix
DAT	dative case
ERG	ergative case
FEM	feminine
FUT	future tense
GEN	genitive affix
IMP	imperative inflection
INDIC	indicative mood
INST	instrumental case
INTERROG	interrogative
INTR	intransitive
LOC	locative case
MASC	masculine
NEUT	neuter
NOM	nominative case
O	transitive object function
OBJ	object (O function)
PAST PUNCT	past punctilinear
PERF	perfect aspect
PRES	present tense
PURP	purposive inflection (on nouns and verbs)
RECIP	reciprocal
REDUP	reduplicated
REFL	reflexive
REL	relative clause marking
S	intransitive subject function
SUBJ	subject (A and S functions)
SUBORD	subordinate marking
TR	transitive
UNM	unmarked
VBLSR	verbaliser

Description of pronouns, in chapter 11, uses the following abbreviations:

1	first person	sg	singular	n-sg	non-singular
2	second person	du	dual	incl	inclusive (addressee included)
3	third person	pl	plural	excl	exclusive (addressee excluded)

Throughout the text we employ S (intransitive subject function), A (transitive subject function), O (transitive object function), and also:

pA	proto-Australian
NP	noun phrase

PN Pama-Nyungan typological class
nonPN non-Paman-Nyungan languages
ϕ to indicate a zero element e.g. zero realisation of a case
* to mark a hypothesised form in a proto-language
> for diachronic change i.e. x>y indicates that 'x, at a certain historical stage, becomes y at a later stage'
+ to mark a morpheme boundary within a word
/. . ./ for phonological and [. . .] for phonetic transcriptions, see p. 126.

A standard orthography, using letters of the Roman alphabet with the addition of *ŋ*, is employed throughout most of the book. The basic system, as explained in 6.4, is:

	apico-alveolar	apico-postalveolar (retroflex)	lamino-(inter)dental	lamino-palatal	dorsal	labial
stop	*d*	*rd*	*dh*	*j*	*g*	*b*
nasal	*n*	*rn*	*nh*	*ny*	*ŋ*	*m*
lateral	*l*	*rl*	*lh*	*ly*		
rhotic	*rr*	*r*				
semi-vowel			*y*		*w*	

If there is a single apical series, the symbols *d*, *n* and *l* are used; if there is a single laminal series *j*, *ny* and *ly* are used. For the few languages (e.g. Diyari and Thargari) where there is a distinction between two series of stops, both voiced and voiceless symbols are used.

Systems of three vowels are shown as *i*, *a*, *u*; where there are five vowels *i*, *e*, *a*, *o*, *u* are used. Contrastive length is shown by doubling the letter, thus *ii*, *aa* etc.

For languages that have an accepted practical orthography, that is in daily use by speakers, we quote forms in this spelling. Walmatjari, Warlpiri and Western Desert all use *p*, *t*, *rt*, *k* and *ng* in place of our standard *b*, *d*, *rd*, *g* and *ŋ*. In addition, Western Desert uses *tj* for the laminal stop (Walmatjari and Warlpiri do employ *j* here). The writing system employed for languages of the Yolŋu subgroup – perhaps the best established practical orthography in Aboriginal Australia – uses underlining for postalveolar (retroflex) sounds i.e. *d̲*, *t̲*, *n̲*, *l̲* corresponding to our standard *rd*, *rt*, *rn* and *rl*; it also employs *dj*, *tj* for lamino-(alveo)palatals and ' for the glottal stop (the contrast between two kinds of stop in Yolŋu languages is discussed in 7.4 and notes thereto.) The Yolŋu orthography uses letters *e*, *o*, *ä* for long vowels, in place of *ii*, *uu*, *aa*.

The first part of chapter 7 describes the sweeping changes that have taken place in several limited regions, leading to the enlargement of consonant and vowel systems. Most of the explanation of these is due to Hale; his symbols have been retained in this discussion.

It has been difficult to decide on a consistent policy for the spelling of language names. The following principles were, roughly, followed. Firstly, if there are literate speakers of a language, and they are known to have a preferred spelling of their language name, this is followed e.g. Warlpiri (now used in place of Walbiri), Burarra, Gunwinygu, Gupapuyŋu (*ŋ* is retained in Yolŋu language and dialect names, as this is used by native writers). Secondly, if no native-speaker preference is known but if there is a well-established spelling for a language that figures prominently in the literature, then this is used e.g. Pitta-Pitta (which would, in terms of our practical orthography, be Bidha-Bidha). Finally, if none of these considerations applies, the name is written according to the spelling conventions followed in this book, except that *ng* is used in names in place of *ŋ* e.g. Warnman, Warrgamay, Bungandij, Gunggay.

In one instance a useful contrast is brought out by the use of two spellings. Tribal language names in the Cairns rain forest region are spelt in the practical orthography – Mamu, Girramay, Ngajan, Jirrbal etc.; these are in fact dialects of a single 'linguistic' language, for which the established spelling Dyirbal is retained.

The pronunciation of words from Australian languages is explained in sections 6.3 and 6.4.

1

Introduction

1.1 The nature of Australian languages

There were about 200 distinct languages spoken by the Aboriginal tribes of Australia. The languages are characterised by subtle and intricate grammars. In most Australian languages words inflect for case, tense and mood in a way that is reminiscent of such languages as Latin and Greek. However, the case systems are organised on an 'ergative' basis, rather different from the classical tongues but similar to Eskimo, Basque and the languages of the Caucasus. In many Australian languages the verb carries information about the person and number of its subject and object, much as in the majority of American Indian tongues. The most complex word structures are found in languages from the central north. In Rembarrnga, for example, a single complex verb form *yarran+məʔ+kuʔpi+popna+ni+yuwa* can be understood as 'it [the kangaroo] might smell our sweat as we try to sneak up on it'; this is reminiscent of the polysynthetic structures found in, say, Nootka from British Columbia.

Australian languages generally have a euphonious sound, with a regular syllabic rhythm, something like Italian. Most of them have about twenty distinctive sounds (or 'phonemes'); that is, about twenty letters are needed in an ideal alphabet. They are almost entirely lacking in sibilants (such as *s*, *sh*) and only a handful use fricatives (*f*, etc). They do, however, make important phonetic distinctions that are not found in the most familiar European tongues: there is, for instance, a contrast between two types of rhotic or *r*-sound. And whereas English has only three contrastive places of articulation for stop consonants – *b*, *d* and *g* – the Australian language Yanyuwa (spoken near Borroloola) distinguishes seven stops. These are *b* and *d*, much as in English; retroflex *ḍ* with the tip of the tongue turned back, as in Hindi and other Indian languages; *d̪*, with the blade of the tongue touching the upper teeth, something like the sound represented by 'd' in French; palatal *ḑ* as in Hungarian; *g* as in English; and *g*^{y}, with articulation slightly further forward in the mouth than for English *g*, as in the Russian palatised *g* sound.

Australian languages probably each have a vocabulary consisting of at least 10,000 lexical words – nouns, verbs, adjectives and so on. This is about the size of the working vocabulary for the average citizen in any country – counts have shown that the number of words used in a popular newspaper in Sydney or New York is of the order of ten thousand. Comprehensive dictionaries of English, French and so on contain more words than this, since they take account of specialist medical, scientific and legal terms and also list semi-archaic forms that are no longer in common usage. Many Australian languages have ancillary vocabularies of a quite different sort – there may be a special speech style (with its own distinctive vocabulary) for use amongst initiated men at ceremonial occasions; and there is often a separate style that must be used when in the presence of a relative of a certain type, someone with whom one should have minimal contact in terms of the rules of Australian social systems (for a man, this includes his mother-in-law). Chapter 3 contains a full discussion and exemplification of special speech styles.

While many of the semantic distinctions made in Australian languages are similar to those in European tongues, there are a number of ingenious contrasts that relate directly to physical and social aspects of life in an Australian community. Tribes living among the well-watered mountains of the dividing range can have grammatical specification for whether some object referred to is uphill, upriver, downhill or downriver, and how far up or down it is. There is often a series of verbs for different kinds of 'spearing', depending on whether the spear is held on to or let go, whether the object can be seen or not, and whether the activity takes place by day or at night, using artificial light. It is common to encounter specialised verbs of 'giving', referring to the satisfaction of social obligation that depends on specific kinship ties, and the like. Some languages in Central Australia have extensive series of pronouns which depend on the section membership (see 2.1) and kin relation of the people referred to. In Alyawarra, for instance, there are three different ways of saying 'you two' – *mpula* has to be used for two people in the same section (in addressing two sisters, for instance); *mpulaka* refers to two people in different sections that are in a father–child relationship (it is used in talking to father and daughter); and *mpulanhtha* is employed where the two addressees belong to different sections for which this relationship does not hold (e.g. mother and daughter). Australian languages typically have rich classes of adjectives, describing physical properties of things, types of skill, and mental attitudes, feelings and propensities of people. Further discussion of the semantics of Australian languages is in chapter 5.

All but two or three of the 200 languages of Australia can be shown to belong to one language family – the 'Australian family' – in the same way that most of the languages of Europe and Western Asia belong to the Indo-European family. All the modern languages in a family descend from a single ancestor language (or 'proto-language') spoken some thousands of years ago. Proto-Indo-European was probably spoken just north of the Black Sea in what is now southern Russia around 5,000 years ago; through migration and regular linguistic change there have emerged the hundred or so modern Indo-European languages. Welsh and Lithuanian, Icelandic and Armenian, Spanish and Maldivian show radical differences, but they can all be traced back to the same ancestor, proto-Indo-European.

Australian languages show a number of common features. For instance, they almost all have three numbers in the pronominal system – singular, dual and plural. Whereas English just uses 'I' and 'we', many Australian languages employ *ŋaju* 'I', *ŋali* 'we two' and *ŋana* 'we all (three or more)'. But they also show considerable variations, almost as much as those between extreme members of the Indo-European family. Nyawaygi, spoken north of Townsville, has only 15 phonemes, made up of 12 consonants and 3 vowels, whereas Anguthimri, spoken near the tip of Cape York in north-east Queensland, may have no less than 46 contrasting phonemes, made up of 29 consonants and 17 vowels. Some Australian languages have one verb covering both 'eat' and 'drink' (the nature of the object noun clarifies the sense intended), whereas in other languages there is a distinct verb 'drink' and also separate roots for 'eat vegetable food' and 'eat flesh food'. Recent work, which is summarised in this volume, suggests that all or almost all Australian languages belong to one genetic family; but during the thousands of years of evolution since proto-Australian many differences have evolved, at the phonetic, grammatical and semantic levels. Anyone speaking Dharuk, from Sydney, would have as difficult a job learning Gunibidji, from Arnhem Land, as a Bengali speaker would have with Scots Gaelic.

1.2 Current misconceptions about Australian languages

By and large, the white population of present-day Australia has little knowledge of the structure or nature of Aboriginal Australian languages. Moreover, they have serious misconceptions about them. If you strike up a conversation with even well-educated white Australians you may hear that 'there's just one Aboriginal language and it has only a few hundred words', or 'Aboriginal languages don't have any grammar', or 'they have only a few score words – names for common objects', or even 'they don't really have a language at all, just a few grunts and groans'.

It is not hard to trace the genesis of such ideas. Popular publications and even school texts explicitly say 'it is held by philologists that there is one Australian language only'. Or, after admitting that 'the aborigines find no difficulty in conveying to one another the ideas and messages they desire to communicate by sounds used much in the same way as among ourselves' one handbook on Aboriginal Australians then put forward the totally unfounded idea that 'there are certain root sounds which are universal. *K* as an initial letter expresses disgust, and is generally used to begin any word signifying aversion, fear or dislike. *Oo*, the broad *u*, invariably is associated with the idea of flatness or horizontality . . .' The reader is then told that 'with such a primitive form of speech, recourse is frequently had to gestures . . .'.

In fact there is no language, among the 5,000 or so tongues spoken across the world today, which could be described as 'primitive'. Every known language has an intricate structure, so that description of the main points of its grammar requires several hundred pages; every language has thousands of lexical words in everyday usage. Some peoples have separate languages for religious ceremonies, or for songs; some have a specific 'sign language' that can facilitate communication over distances where the voice cannot reach, or in circumstances when silence is necessary (e.g. when hunting). None of these auxiliary systems takes any of the communicative load off the everyday language – every known language has about the same degree of complexity and richness as every other.

The fact that there are no 'primitive languages' is taught in linguistics courses at every university and college. Yet misconceptions about Australian languages still persist. The notion that Aboriginal Australians scarcely have anything that could be termed 'language' is a received idea that generations of white Australians have been taught in school, or told by their parents. When questioned they will present – as the final proof of 'primitiveness' – the fact that Aborigines had no written language. But the concept of alphabetic writing developed only once in the history of the world, probably among the Semitic people in the Near East during the second millennium B.C. All modern alphabets go back to that source, being borrowed from language-community to language-community, with slight adaptations made to suit the needs of each tongue. The English writing system was taken over from Latin; this was an adaptation of the Greek alphabet which can itself be traced to Semitic origins. The point here is that Aboriginal Australians just weren't fortunate enough to come into contact with some people using a writing system, that they could borrow and adapt.

Some missionaries and amateur linguists who attempted to study an Australian language have contributed to the misconceptions. They have put it about that although there may be a superfluity of terms for particular objects, the languages are totally lacking in generic terms such as 'fish' or 'fowl'; this is, of course, taken as a lack of mental sophistication. The fact is that Australian languages do have quite as many generic terms as European languages (and some special avoidance styles, or 'mother-in-law' languages, consist almost exclusively of generic terms – see chapter 3). Allusive speech, with deliberate vagueness, can be valued in certain social contexts within Australian societies. But when objects are being named one is generally expected to be as explicit as possible. If, say, a snake is seen it should be described by its species name; the generic term 'snake' would only be employed if just the tail were noticed and the species could not be identified, or in similar circumstances. The limited use that is made of generic descriptions in such cases has quite erroneously been taken by unperceptive observers as evidence that Aboriginal Australians lack the facility for general or abstract thought. The examples given in chapter 3 and elsewhere will demonstrate how wrong these ideas are.

Even after one has explained some of the complexities of Australian linguistic systems there can be a further riposte: 'Perhaps they don't have primitive languages, but they were surely a primitive people.' The point to be emphasised in rebuttal here is that there are many dimensions along which 'primitiveness' or 'lack of complexity' can be measured. Certainly Aboriginal Australians had less material goods than Europeans, but the quality of the implements they did have is impressive – witness the simplicity and effectiveness of the boomerang as a hunting weapon. Hunter-gatherers cannot be burdened by too many implements; Australians devised ingenious means of overcoming this problem, for example the multi-purpose desert artefact which is used as a spear-thrower, as a cutting implement, as a fire-making tool, as a hook for reaching high berries, as a tray in which to mix tobacco or ochres, and as a percussion instrument for song accompaniment.

In terms of social organisation, however, it is Europeans who appear to be primitive by comparison with Aboriginal Australians; all Australian tribes had elaborate and well-articulated kinship systems with precise rules for marriageability and for specifying roles for every sort of social occasion. We can also look up to tribal Australians for their concern with the conservation of natural resources – they would never take all of a crop of fruit, for instance, but would leave some to propagate – and for their attainment over long periods of time of a stable population size (zero population growth). They did not develop domestication of animals or crops, partly because there is little that can be domesticated in Australia and partly because they purposely limited their numbers to the available food that could be procured by hunting and gathering.

The fact is that all human cultures are unique, showing the powerful ingenuity of human expression. Different groups of mankind have, quite simply, developed in different directions. Man is thought to have evolved some two million years ago; for more than 99 per cent of this timespan all mankind were hunters and gatherers. Agriculture and the domestication of animals evolved among some groups only within the last 15,000 years; these innovations have led to an increase in material culture, which has been greatly magnified over the past few centuries and especially the last decades.

Aboriginal Australians were, until European contact, one of the societies that continued a hunter-gatherer economy. But this does not mean that they were in any sense survivors of an earlier, primitive age. They had developed varied and distinctive responses to the wide range of environments in which they lived. While societies in other parts of the world found themselves caught in a spiral of growth and increase in technological complexity, Aboriginal Australians chose to reduce work and technology to a minimum. Their hunting and gathering techniques were such that they spent a smaller proportion of their time on the mechanics of subsistence than do most peasant agriculturalists or industrial workers in other cultures. The time thus made available was utilised to devise complex social systems, rituals, narrative and song traditions and for other aesthetic and intellectual pursuits.

Europeans have stressed the Aboriginal Australians' small material inventory and judged them 'primitive' by their standards. They have overlooked their complex social and intellectual developments, phenomena which cannot readily be seen or measured but which are just as relevant as material goods for establishing a full and satisfying life-style. And they have ignored or devalued Aboriginal Australians' insistence that subsistence endeavour should be as efficient as possible, taking up a minimum of time, so that ample opportunity may be left for artistic and social activities.

It is interesting, and also rather sad, to read the comments of Sir George Grey (Governor of South Australia and later of New Zealand), in 1841: 'If we enquire into the causes which tend to retain them in their present depressed condition, we shall find that the chief one is – "prejudice". The Australians have been most unfairly represented as a very inferior race, in fact as one occupying a scale in the creation which nearly places them on a level with the brutes, and some years must elapse, ere a prejudice so firmly rooted as this can be altogether eradicated, but certainly a more unfounded one never had possession of the public mind.' Very many years have elapsed since Grey wrote these words, but the prejudice shows little signs of abating.

The explorer R. Logan Jack expressed a fairly typical opinion when he wrote, in 1921, that northern Australia was 'thinly peopled by a feeble folk inevitably doomed to vanish from the face of the earth within the current century'. The idea that Aboriginal Australians are a primitive people, with (as a natural corollary) a primitive language, helped justify the murder and genocide that were prevalent until quite recently; this idea underlies the racial prejudice that is still current today in many parts of white Australian society.

The goal of educators should be to point out that Australia contains a wealth of diverse cultures and languages – from the original Anglo-Irish settlers, from the more recent migrant populations from many European and Asian countries, and from the wide spread of Aboriginal Australian societies. It is now beginning to be realised that, just as floral and faunal diversity makes for a strong and healthy ecosphere, so cultural and linguistic diversity goes towards creating a lively and viable human society. The need now is to promote interaction and understanding between all sectors of the Australian community; in particular for non-

Aboriginal Australians to appreciate something of the nature and complexity of Aboriginal cultures and languages and to learn to respect and value them.

In the next section we briefly review the history of study of Australian languages, and of ideas about them and their relationships to each other. 1.4 gives a short linguistic overview of the continent, an introduction to the chapters of more specialised discussion that follow.

1.3 History of ideas about Australian languages

The first Europeans to take down Australian language material were members of Captain Cook's party in 1770. Although they saw Aboriginal Australians at Botany Bay it was not until they were forced to spend seven weeks repairing the Endeavour (some 2,000 miles north of Botany Bay) that they had intensive contact with an Australian tribe. Several members of the party took down word lists in Guugu Yimidhirr, the language of the Endeavour River area, Sir Joseph Banks recording 180 items in all. After comparing their lists they published 60 words for which they were tolerably sure they had the right spellings and meanings.

Cook's party saw a variety of large marsupials and elicited the name for just one species – Guugu Yimidhirr /gaŋurru/ 'large black kangaroo' was recorded as *kangooroo* or *kanguru* and wrongly taken to be the name for any species of kangaroo or wallaby. This was immediately absorbed into the English language and is probably the best-known loan from an Australian tongue. However, much confusion has arisen concerning its original meaning. Captain P. P. King visited the Endeavour River in 1820 and obtained a vocabulary that accorded well with Cook's except that instead of *kangooroo* King's party was given a word which they transcribed as *min-nār*, *mee-nuah* or *mēn-ū-ăh*. Thus it came to be believed that Cook and Banks had been in error, and some authorities even suggested that when asked the name of the animal a Guugu Yimidhirr could have said 'I don't know', this being the true meaning of *kangaroo*! In fact the Guugu Yimidhirr word has just a velar nasal between the first and second vowels, a sound that comes at the end of words in English – as in /siŋ/ 'sing' – but is scarcely ever found between vowels within a root. Banks and his colleagues accurately transcribed this as *kangooroo* but this was then naturally accorded an English pronunciation [kaŋgəru] (if they had written *kang-ooroo* the correct pronunciation might have been perceived). Almost certainly, the Guugu

Yimidhirr in 1820 would not connect King's pronunciation [kaŋgəru] with /gaŋurru/, the name of the large black kangaroo, especially if he were pointing at some other species of kangaroo at the time. It is likely that the Guugu Yimidhirr actually gave King the generic term /minha/ 'any edible animal'. In 1898 the pioneer ethnologist W. E. Roth wrote a letter to the *Australasian* pointing out that *gang-oo-roo* did mean 'kangaroo' in Guugu Yimidhirr, but this newspaper correspondence apparently went unnoticed by lexicographers. Finally, the observations of Cook and Roth were confirmed when in 1972 the anthropologist John Haviland began intensive study of Guugu Yimidhirr and again recorded /gaŋurru/.

When Aboriginal tribal lands were invaded in 1788 and a convict colony established at Sydney Cove, just by Botany Bay, Governor Arthur Phillip carried a copy of Banks' Australian vocabulary, to help his communication with the natives. Phillip evidently imagined that Cook and Banks had gathered their vocabulary at Botany Bay; but the exact location would scarcely have been thought important since it was believed that there would be just one language spoken by the Australians. There was much bewilderment when none of the Dharuk words from Sydney coincided with the forms recorded in 1770. There were plenty of kangaroos around Sydney Cove but the Dharuk people did not recognise this word; indeed they thought they were being taught an English generic term and enquired whether cows were a type of kangaroo! Many words from the Sydney language were taken over, suitably adapted in form to fit the phonetic pattern of English. Thus (writing Dharuk words in the practical orthography described in chapter 6) /diyin/ 'woman' was taken over as English *gin*; /din-go/ 'tame dog' became the English term *dingo* used to describe WILD Australian dogs, and the Dharuk term /warrigal/ 'wild dog' is to this day a bushman's synonym for dingo, amongst other meanings. /wamara/, the name for a throwing stick used to speed spears into their trajectory, became English *woomera*; /gunyi/ 'hut' became English *gunyah*, the name for any type of Aboriginal Australian dwelling.

The lack of correspondence between the local language and the Cook/Banks vocabulary remained a perplexing mystery. It was not solved for three years, until Phillip led a small exploring party – including some members of the Sydney tribe – 40 miles to the north-west, the furthest exploration they had attempted. As Phillip described his discovery, in a letter to Banks: 'It was a matter of great surprise to me when I first arrived in this Country, to find that the words used by the natives when you was here, were not understood by the present inhabitants, but in my last little journey, I found on the banks of the Hawkesbury, people who made use of several words we could not understand, and it soon appeared that they had a language different from that used by those natives we have hitherto been acquainted with. They did not call the Moon, *Yan-ne-dah*, but *Con-do-in*, they called the Penis *Bud-da*, which our natives call *Ga-diay*. Two of those natives who have lived amongst us for some time were with us, and it was from them that we understood, our new friends had a language different from theirs . . . I now think it very probable that several languages may be common on different parts of the coast, or inland, and that some tribe may have driven away the people you found on this part of the coast.' The enigma was solved – there were A NUMBER OF distinct languages spoken on the continent. Small wonder that if a different language were spoken only 40 miles from Sydney there should be little in common between the Sydney language and the earlier vocabularies that had in fact been gathered at the Endeavour River, 2,000 miles to the north.

Several officers of the First Fleet took down word lists during the early months of the convict colony. Lieutenant William Dawes (1762–1836) had had a sound classical education and commenced a masterly grammar, gathering paradigms of verbs and sample sentences, written down with remarkable attention to phonetic detail. Dawes at first refused to go on a punitive expedition against the Aborigines in December 1790; he was persuaded to go but later expressed his regret at having been involved. Refusing to apologise to Phillip, Dawes was sent home in December 1791, taking his grammatical notes and vocabularies with him; they eventually found their way to a London library but did not come to the attention of linguists working on Australian languages until 1972. (Dawes' careful description is invaluable; it is the only extensive work on the long extinct language of Sydney.)

As the colony grew little interest was evinced in Australian languages. The missionary L. E. Threlkeld arrived in 1825 to open an Anglican mission for the Aborigines at Lake Macquarie, 70 miles north of Sydney, and produced good grammars and gospel translations; but his work received little attention. It was generally understood that there were many diverse languages or dialects, but they were not thought worth the trouble of learning. They were believed even by well-educated settlers to be poor and ill-formed vehicles for communication, unsuited for the expression of abstract or logical thought.

Tasmania suffered white invasion in 1803, followed by perhaps the worst example of genocide ever recorded. Little was written down of Tasmanian languages, and the material collected was of very poor quality; it is discussed in 8.2. When during the 1820s and 1830s new colonies were founded in Western Australia, South Australia and Victoria, there was more interest in the Aborigines and their languages than there had been in New South Wales for many decades. The government in London was becoming concerned about maltreatment. This led to the appointment of 'Protectors of Aborigines' and the secondment of missionaries; some of the latter were excellent linguists although by-and-large their work received little circulation.

The early explorers were generally humane and inquisitive, often compiling useful word lists. It was in the account of his expeditions in Western Australia – published in 1841 – that Captain George Grey made the second great breakthrough in Australian linguistic studies, comparable in importance to the first revelation, by the side of the Hawkesbury River in April 1791, that there must be many different languages spoken in the continent. Grey noted recurrent similarities amongst the multitude of languages; firstly 'a general similarity of sound and structure of words in the different portions of Australia, as far as yet ascertained'; and secondly 'the recurrence of the same word with the same signification, to be traced, in many instances, round the entire continent, but undergoing, of course, in so vast an extent of country, various modifications'. To mention just one of Grey's examples the word for 'water' at Adelaide was *kauw-ee* and that at Perth *gab-by* or *kuyp-e*; but the tribe a dozen miles from Perth had *kow-win* for 'water', a form that was very similar to that used at Adelaide. Grey gave examples of lexical forms that occurred with a given meaning not in every language but in some languages from every region of the continent; he also proffered a table of pronouns, demonstrating the similarities in form between Western Australia, New South Wales and South Australia.

Grey showed not only that there was a typological similarity between the languages of Australia, he also gathered enough cognates to suggest an historical connection between them: in effect, he suggested that the languages all belonged to a single genetic 'language family'. In Grey's own words: 'Having thus traced the entire of the coast-line of the continent of Australia, it appears that a language the same in root is spoken throughout this vast extent of country; and from the general agreement in this as well as in personal appearance, rites and ceremonies, we may fairly infer a community of origin for the aborigines. This being admitted, two other questions will arise. How were they disseminated over the continent? And, at what period, and from what quarter, did they arrive upon it?'

There was scarcely any work on Australian languages between the mid 1840s and the late 1870s (just a little new material came from missionaries). An interesting correlation can in fact be made: in times when Aboriginal Australians were being treated reasonably well there was a great deal of interest in their culture and language; when they were being treated badly, there was a noticeable absence of linguistic work. (An extreme case is Tasmania, where they were always treated badly and scarcely any linguistic work was done before all the full-bloods had died out.)

In the early years of Sydney Cove there was a keen interest in Aborigines and attempts at conciliation. After about four years this was replaced by outspoken hostility; as settlers fanned out from Sydney to take over more and more land Aboriginal Australians were quickly and brutally dealt with. There was scarcely any linguistic work in New South Wales – except for one or two missionaries like Threlkeld – from the mid 1790s until the late 1870s. In the early years of the other colonies there was some excellent linguistic work by all sorts of people; but, as at Sydney, this soon stopped. Settlement swept into all parts of the continent, following discoveries of gold and the opening up of new pastures for livestock. Aboriginal Australians were pushed out of the way and those who were not shot or poisoned, or who did not die from measles or influenza, were confined to mission stations, or perhaps permitted to live as fringe dwellers around the towns that had sprung up. There was no interest in their languages.

Then, around 1875, things began to change. Expansion and exploration had virtually ceased in most regions, and those Aborigines who survived in the settled areas began to be treated better. A doctrine of Social Darwinism provided 'the basis for an evolutionary theory of social development in which fitness to survive was measured by technological sophistication . . . The effect of the theory was to foster the notion that the Aborigines were a relic of a lower order of evolution, a relic which could not withstand contact with a superior race and for whom there was no room in the dawning twentieth century.' It was thought inevitable that Aborigines would soon die out, and meanwhile they should be treated in a kindly fashion; they were in most regions free to take jobs, keep the money they earned, and move around freely. It was at this time that a whole generation of amateur anthropologists sprang up, keen to act before it was too late to describe and compare Aboriginal artefacts, customs, kinship systems and – certainly not least – their vocabularies.

Foremost among these amateur scholars was E. M. Curr, who had been a sheep farmer on the Goulburn River in Victoria during the 1840s and who reveals in his memoirs a more enlightened and insightful view of Australian Aboriginal society and languages than most of his contemporaries. Curr circulated among squatters, policemen and magistrates across the continent a list of 125 English words, for which he requested the local Aboriginal equivalents; he published the resulting 300 vocabularies as a four-volume work. In an interesting introduction Curr effectively continued Grey's work of assembling cognates from different parts of the continent – he noted *guna* 'excrement', *jina* 'foot', *mara* 'hand', *jalany* 'tongue', *yirra* 'teeth', *ya-n* 'go, walk', *ŋamun* 'breast' and a dozen other words, items that must be the cornerstone of any Australian Etymological Dictionary. But there was still much anti-Aboriginal feeling, and distaste for this sort of endeavour. Curr's title page is printed with an acknowledgement to The Honourable Jonas Felix Levien, Minister of Mines 'through whose influence it was published by the Government of Victoria'; over this Curr sadly wrote, in his personal copy of the book into which he had put so much time and effort: 'The *Australian Race* was begun to be printed about 12 Feby 1885 and was published 14 September 1887. It had been all printed two or three months prior to that date, but the Premier Duncan Gillies would not direct its publication. He declined to send copies to the press, or to spend 6^{d} in advertising it. Altogether the work appeared under very disadvantageous circumstances. (I sent a few copies to the press in the several colonies.)'

In 1881 James Dawson, an elderly farmer from the Western District of Victoria, wrote a 220-page account of the habits, customs, culture and language of three local tribes. Dawson had a perceptive understanding of the nature of Aboriginal society and its linguistic wealth; he was also vociferous in favour of Aborigines' rights, combating mistreatment and misinformation.

But for every person like James Dawson there were half-a-dozen commentators who, from superficial observation that Aboriginal Australian culture had quite DIFFERENT guiding principles from European society, would conclude that it was worse. It was their narrowness of view that led directly to comments on the 'poverty' of Aboriginal life and language. A prime example was the Norwegian zoologist Carl Lumholtz who recounted his adventures during a year with the Warrgamay tribe in North Queensland in the international best-seller *Among cannibals* (1889). He stated 'their culture – if indeed they can be said to have any culture whatever – must be characterised as the lowest to be found among the whole genus *homo sapiens*', but inadvertently showed his own lack of insightful observation in suggesting that 'my predecessors have mainly directed their attention to the tribes in the southern part of Australia, which in many respects have attained a higher intellectual development than their northern kinsmen'. There is in fact no evidence that intellectual development differs between tribes in different parts of the continent.

Although he lived among the tribe for eleven months, Lumholtz apparently never learnt to speak the language. His comments on it are again uninformed: 'The vocabulary is small. The language is rich in words describing phenomena that attract the attention of the savage, but it lacks words for abstract notions. The natives, being utterly unable to generalise, have no words for kinds or classes of things, as tree, bird, fish, etc.' Lumholtz listed 140 words he had gathered during his stay; in 1972 I gathered a thousand words in just a few days from the last Warrgamay, who were remembering back to a language they had not actively spoken for years. They included generic nouns such as *wagun* 'tree', *jiijii* 'bird', *jaabu* 'fish', *gungul* 'vegetables' and so on. Warrgamay is in fact particularly rich in abstract nouns, such as *gawan* 'anger' and *biira* 'fear'. Lumholtz made many other quite erroneous comments, as 'there is frequently no difference between nouns, verbs, and adjectives . . . *Poka* means smell, to smell and rotten'. In fact *buga* is an adjective 'rotten, stinking', an inchoative verb stem can be formed from it by the addition of the suffix *-mbi*, giving *bugambi-* 'to become rotten'. There is a transitive verb *balmbi-* 'to smell' and also an abstract noun *juŋu* 'odour, smell'.

I have dwelt on Lumholtz's linguistic misconceptions since they were so widely read and believed. They are still quoted as proof of the 'primitiveness' of Australian cultures and languages, and have had a pernicious influence on later writers. The misleading statements that recur in schoolbooks and in popular belief can be traced to this and similar sources.

The golden age of amateur anthropologists and linguists ran from about 1880 to 1910. Some thoughtful ideas were put forward at this time: the Rev. John Mathew in his book *Eaglehawk and Crow* (1899) suggested that Aboriginal Australians were a blending of two original races, one darker skinned than the other, and gave as evidence the contrast between dark and light in Australian myth and totemic symbols (typically, the two birds in his title); Mathew also did some useful ethnographic and linguistic description. The most extensive linguistic work during this period was that undertaken by a Sydney surveyor, R. H. Mathews, who produced short grammatical sketches and word lists for dozens of languages from the south-east; in many cases Mathews' material is virtually the only data on tongues that are now extinct. Unfortunately, Mathews tended to doctor and normalise his notes for publication, so that recourse must be had to the original field notebooks.

No one in Australia attempted to continue Grey's and Curr's comparative work at this time, but Father Wilhelm Schmidt of Vienna – who never in his life heard an Australian language spoken – made a full study of the literature and produced a classification of Australian languages, with hypotheses about their relationships one to another. Schmidt emphasised that *Die Gliederung der Australischen Sprachen* (1919) was based on largely unreliable materials, but – among other merits – it did include a full bibliography on each of the languages he recognised.

There was from 1896 a monthly anthropological journal, *Science of Man*, that could be bought for sixpence at station bookstalls; settlers were encouraged to send in any snippet they could gather from the remnant of their local tribe. This popular interest tied in with fairly easy-going government attitudes towards Aborigines. Then in the early 1900s attitudes changed. The Queensland government had in 1897 introduced a new Aborigines Protection Act, but they assured its critics that they had no intention of invoking the powers it gave them minutely to control the lives and pursuits of their wards – things were to be allowed to continue as they were. They stuck to their word, for the next decade. Dr W. E. Roth, Chief Protector for Aborigines, was based at Cooktown (the mining boom town that had grown up at the mouth of the Endeavour River, on the site of Cook's landing); he was active in providing a fair deal for Aborigines and also did much competent ethnographic and linguistic description. But Roth was under continual attack in the parliament and in 1906 he left for British Guiana. Attitudes towards Aborigines were slowly but surely hardening at this time. The fact that *Science of Man* was forced to drop back to quarterly publication in 1912 (and then reprinted articles from a dozen years before, probably because new information was just not being sent in) is symptomatic of the times; it finally ceased publication the following year. In 1913 the Queensland government rounded up all Aborigines from settled districts and took them off in chains to isolated semi-penal settlements. The other states were acting in a similar fashion; no Aborigine could travel outside his prescribed settlement without permission and there were restrictions on what he could do, what money he could spend, and the like.

The dark ages of Australian Aboriginal policy extended from about 1910 until the 1960s. Significantly, there was virtually no linguistic work undertaken during this period. In fact only one scholar, Arthur Capell of the University of Sydney, was active in the field during this period. He undertook pioneer fieldwork in the far north among tribes who had by and large not yet been touched by white settlement (but this was only a secondary interest for Capell, whose major field of research was always the languages of the Pacific). Popular writers spoke of 'the Aboriginal language' and their comments were more uninformed and prejudiced than almost anything put out in the previous century. *The Aboriginal word book* by Justine Kenyon (published in 1930; revised edition 1951, reprinted 1960, 1964, 1968 and 1975) said that there was just one Australian language but its dialects differed 'more than does the guid braid Doric of Aberdeen from the Cornish tongue of Penzance'. The book contains in all a few hundred words, each with meaning and locality e.g. 'North Queensland'; there are in fact at least two dozen distinct languages in North Queensland, each with a vocabulary of ten thousand or more words! It was this book and others that were modelled on it, which are still the only works on Australian languages that can be found in most bookshops, that further nurtured the idea of 'primitiveness'.

Serious and extensive linguistic work began in the late 1950s, heralded by Capell's handbook of phonetic and grammatical features across the continent: *A new approach to Australian linguistics* (1956). Capell also included a list of 'Common Australian' vocabulary – about forty items which can be found in some languages from all regions – that effectively continued the work of Grey and Curr. But he was wrong in suggesting that not many more forms have such a wide circulation (this conclusion stemmed partly from the poor quantity and quality of the vocabulary lists available to Capell); it is now clear that many hundreds of forms should be reconstructable in a large-scale Australian Etymological Dictionary.

The first University Department of Linguistics was founded in 1965; others followed, but there is still less linguistics at Australian universities than in most comparable countries. A score or so professional linguists are now working in the Australian field. As more training has become available, the quality has gradually risen; by the mid 1970s the standard of description of Australian languages began, for the first time, to measure up to the standards found on other continents. The most exciting development was the founding of the School of Australian Linguistics within the Darwin Community College, in 1974; its purpose is to train native speakers of Australian languages as linguists, so that they may devise orthographies and write grammars for their own tongues, and use these in bilingual educational curricula and the like.

This new interest and awareness in Australian languages among academic circles is only slowly filtering through to the population at large. An appreciation – however superficial – of the nature of Australian languages must surely make for a better understanding between the races, and can only facilitate co-existence and mutual co-operation.

1.4 The Australian language family

Tribes were distinguished from one another in Australia partly by linguistic factors. Each tribe had certain grammatical constructions and certain lexical words different from its neighbours; these would be taken as defining characteristics of that tribe. Sometimes the linguistic differences between neighbouring tribes would be fairly minor, rather like those between American English and British English, or between Swedish and Norwegian; the speech of the two tribes would be mutually intelligible. In these circumstances we say that the tribes speak different dialects of the same language (defining 'language', in the technical linguistic sense, in terms of mutual intelligibility between its dialects). In other cases the speech of one tribe would be quite unintelligible to anyone knowing the speech of a neighbouring tribe, and here we would say that the tribes speak distinct languages. There is fuller discussion of the relationship between tribe and language in chapter 2.

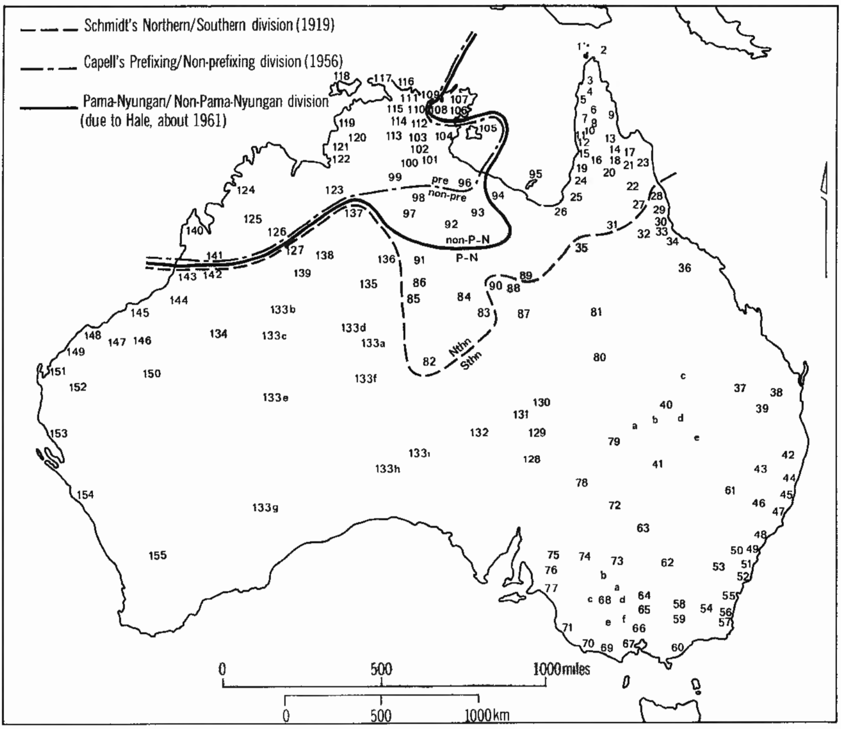
There were around 600 distinct tribes in Australia, speaking between them about 200 different languages. Sometimes a group of half-a-dozen or more contiguous tribes might effectively speak dialects of a single language; at the other extreme, some languages were confined each to a single small tribe. It is thought that each tribe had something of the order of 500 members on average; the number of speakers of particular Australian languages would have ranged from a few hundred to a few thousand. The size of tribal territory depended upon the abundance or scarcity of food-bearing plants; a few hundred square miles on the richly vegetated, well-watered east coast could support the same number of people as tens of thousands of square miles in the arid interior. Within the total Australian land area of about 3 million square miles it seems that the multi-tribe Western Desert language was largest both in terms of geographical extent – some 500,000 square miles – and also in number of speakers – perhaps 6,000. In contrast with this, a typical 'small' language was Yaygir; it may have had less than 500 speakers, living over less than 1,000 square miles round the mouth of the Clarence River, in eastern New South Wales.

Of the 200 or so languages spoken in Australia before the European invasion about 50 are now extinct, the last speakers having died some years ago; in most cases there are still some people who would claim tribal membership but they know only a dozen or so isolated words of what was once a full and flourishing language. Then there are probably around 100 languages that are on the path towards extinction. Some are remembered by only a handful of old people, and will cease to be spoken or remembered within a very few years; others may be being learnt by children in a few families but the total number of speakers is so small – a few dozen or less – that these languages seem bound gradually to drop out of use over the next few generations. Finally, perhaps 50 languages are in a relatively healthy state – spoken as first language by a few hundred (or, in one or two cases, by a few thousand) people and preserving their full range of use in everyday affairs and in ceremony and ritual. Oral literature, which may go back thousands of years, is still handed on from one generation to the next. Orthographies have been devised for some of these living tongues and bilingual education projects have recently commenced in a few of them. Discussion of the role of language in Aboriginal Australian society today is in chapter 4.

It has been thought, since Sir George Grey's classic chapter in 1841, that all or almost all Australian languages are probably genetically related as one language family; but as yet no explicit demonstration has been given of their connection. This would entail putting forward a hypothesis about aspects of the grammar and vocabulary of the unique ancestor language – called proto-Australian – from which all modern languages must have sprung, and then describing the systematic changes by which each of the 200 attested languages developed. This book – in particular parts of chapters 6, 7, 10, 11 and 12 – is the first partial attempt to demonstrate the genetic unity of Australian languages.

Archaeological work shows that man has been in Australia for over 30,000 years (indeed a figure of 80,000 years has recently been put forward); it also indicates that the wild Australian dog, the dingo, was brought into the continent perhaps only about 4,000 years ago, suggesting that there must have been at least two waves of invasion before the Europeans. We have no way of telling whether proto-Australian was spoken 30,000 years or longer ago, or much more recently than that. There are many possibilities – proto-Australian could have been spoken by the dingo-bearing people four millennia ago, and it could have spread and displaced the languages then spoken in the continent (just as French, a descendent of Vulgar Latin, replaced the Celtic language Gaulish in France during the first millennium A.D.). Although we shall probably never be able to offer any proof, it is likely that proto-Australian was spoken a considerable time ago; probably some time before proto-Indo-European, which is dated at around 3000 B.C. In tracing the history of the Australian language family we have to bear in mind that climatic conditions have changed markedly over the past 30,000 years; the distribution of water and of edible animals and plants has altered considerably, in ways that geographers are just beginning to understand. Remember too that ten or twelve thousand years ago it was possible to walk from Australia to Tasmania, and also to New Guinea.

The inhabitants of the Torres Straits Islands, between Australia and New Guinea, are Papuan in both physical type and culture. However, they speak two languages – the western tongue appears to be a member of the Australian family while the eastern language is believed to be related to Papuan languages, spoken in New Guinea. Little is known of Tasmanian, which ceased being actively spoken more than a century


Schmidt's Northern/Southern division (1919)
Capell's Prefixing/Non-prefixing division (1956)
Pama-Nyungan/ Non-Pama-Nyungan division (due to Hale, about 1961)
pre
non-pre
non-P-N
P-N
Nthn
Sthn
0
500
1000 miles
0
500
1000 km

Map 3. Major classifications of Australian languages (note that Schmidt had inadequate data on northern languages, and on their locations. His line has been slightly repositioned in the light of modern knowledge). Key as for map 2

ago, but there is NO evidence that it was NOT related to languages on the mainland. The Australian language family is, then, geographically compact. Furthermore it has not been possible to demonstrate any sort of connection between Australian languages and any other language family. It is likely that any sister language which speakers of proto-Australian left behind in South-East Asia or New Guinea has changed out of all recognition over the intervening millennia so that it is no longer possible to perceive similarities. Chapter 8 continues this discussion of the internal links between Australian languages, and gives more detail concerning the fruitless attempts to establish genetic connections with languages outside the continent.

There have been three major attempts at classification of Australian languages. The first was by Wilhelm Schmidt in his *Gliederung* (1919). Schmidt separated off 'southern languages' – which have similar grammar and vocabulary – from 'northern languages'; the line of division is shown on map 3. Schmidt's was the most careful study of existing materials and he thought it possible that the northern languages might be more closely related to the languages of New Guinea than to their southern neighbours. It was not in fact until 1963 – when Kenneth Hale demonstrated the regular changes by which languages of the Cape York Peninsula have dropped their initial syllables, and so on – that some of these tongues were seen to be fully Australian; detailed discussion of Hale's work is in chapter 7. In fact Schmidt looked at quite superficial features – for instance, which sounds could occur at the end of a word – that are seldom good criteria for genetic grouping.

In 1956 Arthur Capell divided Australian languages into those which use prefixes in addition to suffixes, and those which employ suffixes only. This classification into 'prefixing' and 'suffixing' (perhaps more appropriately called non-prefixing) languages – which is also shown on map 3 – was intended as a typological aid, with no genetic implications. It is interesting that the prefixing languages form a solid geographical block; in chapter 8 we mention the many areal features of this type in Australia, and the difficulty of distinguishing them from inherited features that are indicative of genetic connection.

The third classification is due largely to Kenneth Hale (and was put forward about 1961–3). It essentially links together Schmidt's southern languages with those northern (and some central) tongues that Hale had shown to have evolved from a language of the southern type by recent changes; this group covers almost nine-tenths of the continent and Hale named it 'Pama-Nyungan' after the words for 'man' at its north-eastern and south-western extremities. Pama-Nyungan languages are typologically very similar, so that it was thought to be a relatively simple matter rigorously to prove their genetic connection. The non-Pama-Nyungan tongues show much more diversity (and were grouped into twenty-odd further 'families', each said to be on a par with Pama-Nyungan). The Pama-Nyungan/non-Pama-Nyungan division is also indicated on map 3. In chapter 8 we discuss a genetic connection between languages from Hale's two groups, and also consider whether Pama-Nyungan is a valid genetic subgroup within the Australian family.

It is one of the fundamental insights of modern linguistics that languages differ not in what they CAN say, but in what they MUST say. That is, certain semantic choices must be made if a sentence in a given language is to be grammatical. In English, for instance, a noun must generally be specified either as plural (by the suffix *-s*) or as singular (by the lack of any such suffix). We have to say *I saw the horse* or *I saw the horses*. In Australian languages there is no obligatory specification of number on nouns – the Dyirbal noun *yarraman*, for instance, means 'horse' or 'horses'; *ŋaja yarraman buran* ('I horse saw') means, literally, 'I saw one or more horses.' That is, one does not have to specify number on nouns in Dyirbal, as one is forced to do in English. But it is possible optionally to add a number suffix if this sort of specification is desired – *yarraman+jarran* is 'two horses' and *yarraman+yarraman* 'many (more than two) horses'.

Examples can of course be found in the opposite direction – choices that have to be made to produce a grammatical Dyirbal sentence that are not obligatory in English. For Dyirbal pronouns there is a distinction between singular, dual and plural (referring to three or more). Whereas in English we can say 'are you hungry?' in Dyirbal one must choose between *ŋinda+ma ŋamir* 'are you (singular) hungry?', *nyubala+ma ŋamir* 'are you two hungry?' and *nyurra+ma ŋamir* 'are you all (three or more) hungry?' (*ŋamir* is 'hungry' and *-ma* is a clitic that is attached to the first word in a sentence to make it into a question). We CAN be more specific in English – by adding 'two' or 'all' to 'you' – but we do not HAVE to be.

Although there are many grammatical and some phonological differences among Australian languages, there are also recurrent similarities; these are partly the common inheritance from proto-Australian and partly the effect of certain features which have spread, and diffused over the whole continent. For instance, most Australian languages distinguish very strictly between transitive and intransitive verbs; there is almost always a nasal consonant corresponding to each stop consonant; and so on. Detailed discussion of structural similarities and differences between Australian languages, and explanations for these, make up chapters 6 and 9–13.

2

Tribe and language

2.1 Social organisation and naming

The anthropologist Mervyn Meggitt has described Aboriginal Australians' 'view of the universe that regarded man, society and nature as interlocking and interacting elements in a larger, functionally integrated totality. According to Aboriginal belief, each variable in the system had an eternal, moral commitment to maintain itself unchanged for the benefit of the others and to contribute to the proper functioning of the system as a whole.'

Kin relationships constitute the guiding principle of Australian society. Both near and distant relatives are classified into the same basic set of kin categories (a stranger will soon be 'adopted' into an appropriate class). A single label will be used for a variety of relatives of different generation levels who all have the same social role with respect to Ego. Thus the Gariyarra (Kariera), from north-west Western Australia, use *mayili* for 'father's father and his brothers', 'mother's mother's brothers' and for 'son's children of a male Ego'; and they use *dhami* for 'father's mother's brothers', 'mother's father and his brothers', 'spouse's father's father' and 'daughter's children'. 'All people with whom a person comes into contact are classified and known by a particular kin term, and most interaction is modelled on an ideal of behaviours that characterise the kin relationships involved.'

Related to the kinship categories, many Australian tribes have a system of four 'sections'. Each person belongs to just one section, his mother and father belong to other sections, and his spouse must come from the remaining section. The sections effectively provide a grosser classification than the more finely articulated kinship system; each section groups together a number of kin categories.

We can illustrate for the Gariyarra tribe. Here, a man belonging to the Garimarra section should marry a Balyirri woman and their children would belong to the Buruŋu section; a Garimarra woman is expected to marry a Balyirri man and their children would be Banaga. A Buruŋu man marries a Banaga woman with their children being Garimarra. Finally, a Buruŋu woman should marry a Banaga man with their offspring belonging to the Balyirri section. Such a system is essentially symmetrical between the sexes. We can diagram it, with '=' symbolising marriage and '→' for a mother–child relationship:

(1)
$$\begin{tikzcd} \text{Garimarra} \arrow[d, leftrightarrow, bend right] & = & \text{Balyirri} \arrow[d, leftrightarrow, bend left] \\ \text{Banaga} & = & \text{Buruŋu} \end{tikzcd}$$

Alternatively, we could use '→' to symbolise a father–child relationship, and diagram the section system:

(2)
$$\begin{tikzcd} \text{Garimma} \arrow[d, leftrightarrow, bend right] & = & \text{Balyirri} \arrow[d, leftrightarrow, bend left] \\ \text{Buruŋu} & = & \text{Banaga} \end{tikzcd}$$

Australian tribes had no kings or elected leaders or even, in any formal sense, governing councils. Most adult men would be likely to play a significant role in initiating and organising social events. For some types of activity the father–child (patrilineal) link was important; that is, the men in pairs of sections from the columns of (2) would share mutual responsibility and join together to assist each other. But for other kinds of activity the matrilineal link – joining together sections in the columns of (1) – was most powerful. 'Through a great part of Australia there was a tendency for patrilineal categories to be concerned with highly ritualised cult activities involved in religious initiation and totemism, whereas matrilineal categories were likely to have to do with secular social events such as birth, betrothal and marriage, mourning and avenging deaths.'

Responsibility for organising 'large-scale activities that involved the whole of the local community or even several neighbouring communities' would effectively rotate, so that 'at some time or other these tasks fell to every man of mature age in the group. The man (or men) who took the lead in arranging matters for a particular revenge expeditition, or a betrothal, or a circumcision ceremony did so because of his (or their) putative kinship connection with the central figure, be it the deceased, the groom or the novice. Thus, in some tribes the mother's brothers of the victim avenged his death; the father and elder brothers of the young man amassed his bride-price for him; the elder brothers, father's father and mother's mother's brothers of the novice guided him through the initiation. On the next of these occasions, however, a different individual would be the central character (living or dead) in the drama. The people who had previously occupied the significant statuses would now be related in other ways to the new figure and consequently would now play different and perhaps unimportant roles.'

In many Australian kinship systems an important distinction is made between people linked by relatives all of the same sex, and those whose connection depends on people of both sexes. Thus, a child's mother's sisters' and father's brothers' children are classed together as 'parallel cousins', people who he can freely associate with (and who will belong to the same section as him). But his mother's brothers' and father's sisters' children belong to a different section (that from which his spouse must be chosen) and he must behave in a quite different manner with respect to these 'cross cousins'. There is generally a preferred kin class from which a spouse should ideally be drawn – in many Australian commmunities the ideal situation is for a man to marry someone who bears the relationship mother's mother's brother's daughter's daughter; failing this, someone who is mother's brother's daughter (both of these would be in the appropriate section). The great majority of marriages will follow this rule (or whatever other social convention holds), although there is always a minority who may flaunt or try to flaunt the accepted constraints.

There can be variations on the pattern of four sections. Some Australian tribes have instead eight subsections; essentially, each section is divided into two parts. A spouse should be chosen from a particular subsection, usually that to which mother's mother's brother's daughter's daughter belongs. Or there can be just two moieties, instead of four sections; this is as if the two sections in each of the columns of (1) – or else of (2) – were lumped together as a single group. Some tribes have only moieties or only sections or only subsections, but many have two – and some have all three – of these modes of classification. There is evidence that subsections evolved quite recently in the north-west and that this system has gradually diffused to the south and east (it still covers a relatively small part of the continent).

One of the best known moiety systems is that of the Yolŋu-speaking tribes in Eastern Arnhem Land (where it coexists with a subsection classification). Each person is either Dhuwa or Yirritja and must marry someone of the opposite moiety; children belong to the same moiety as their father, showing that this schema corresponds to the columns of (2). (An example of matrilineal moieties is given in 2.2.) In this region there are institutionalised linguistic differences between the speech of the two moieties; we return to this in 2.3.

Moiety or section membership can play an important role in determining linguistic usage. In 1.1 we mentioned the three forms for each non-singular pronoun in Alyawarra, determined by the section membership of the people being referred to. Kinship classification serves to determine roles in ritual and religious ceremonies. There are in many tribes special speech styles that are used in ceremonies of certain types e.g. in tutoring men about to be initiated; or that must be used in the presence of anyone with whom contact has, for social reasons, to be kept to a minimum. In order to know how to speak in any given circumstances one must have a full understanding of the institutionalised kin relationships holding between the speakers and addressees. These special speech styles are discussed in the next chapter.

We began by identifying as interlocking and interdependent elements: man, social organisation, and nature. Each 'clan' or descent group within a moiety is associated with a certain group of important places within the tribal territory, with certain types of meteorological and geographical phenomena, and with a certain set of animals and birds. Often there are traditional stories concerning the creation or origin of flora and fauna, and these sometimes extend to the origin of social classes. In Eastern Arnhem Land, for instance, quite different mythological characters are associated with Dhuwa and with Yirritja. Territory is divided between clans of these two moieties, giving a patchwork of alternating affiliations. The creator beings of one moiety never touched land belonging to clans of the opposite moiety: they avoided it by tunnelling under, flying over, or swimming round.

Almost everything significant in nature – animate or inanimate – can be regarded as the conventional index or 'totem' of one moiety, section, subsection or 'clan'. Sometimes even the seasons have totemic significance. The Yidinyji tribe, from the east coast, associated the Gurrabana moiety with the wet season and included among its totems 'storm', 'rainbow' and 'cassowary'; the Gurraminya moiety was linked with the dry season and had as totems 'fire', 'eaglehawk' and so on. The anthropologist Lloyd Warner gave a meticulous account of totems for the different 'clans' that make up the Dhuwa and Yirritja moieties in Arnhem Land; to quote just two examples, the Yirritja group that is named Warramiri has as totems crayfish, whale, the black duck's egg, and a type of large basket, whereas the neighbouring Dhuwa group

Wurrul̲ul̲ had red parrot, goanna tail, swamp grass and yamstick amongst many other totems. The social rules concerning totems vary a good deal from tribe to tribe: sometimes a person is not permitted to hunt or eat his animal totems; he may have an obligation to arrange ceremonies that will assist his totemic species to flourish; and so on. What is constant over the continent is the fact that totems always have a considerable social significance, of one sort or another. The main linguistic importance of totemic associations lies in the sphere of personal names.

There is often a difference, in Australian languages, between terms of personal reference – used when talking about someone to a third person – and terms of address. There are a number of different modes of address (and of reference). Someone may be referred to by a classificatory kinship term, or by the name of the section to which he belongs, or by an age-group term (e.g. 'young boy at the first stage of initiation'). Each member of a tribe will also have a number of personal names, of different types. They may be generally known by a nickname, describing some incident in which they were involved or some personal habit or characteristic e.g. '[she who] knocked the hut over', '[he who] sticks out his elbows when walking', '[she who] runs away when a boomerang is thrown', '[he who] has a damaged foot'. But each individual will also have a sacred name, generally given soon after birth, that usually has some association with one of the totems of his moiety, section, subsection or clan. He may be called after some sacred place, or after a totemic animal or plant, or even after a verb that describes the typical activity of some totemic entity. The personal name may be identical in form to the common noun or verb on which it is based (e.g. Jarruga 'scrub hen') but more frequently it involves some phonological addition or change to the root – thus, a member of the Yidinyji Gurrabana moiety was called Jarriyi from the verb *jarri-n* 'disappear, sink down, become lost', typically used to refer to the totemic rainbow sinking down out of the sky.

In some communities two people may have a personal name in common; there will be specific social behaviour associated with this and there may even be a particular grammatical form for referring to two people who share the same name. In other regions the same name could never be used for two living people; in these communities a name may occasionally be re-used, long after its bearer's death, say for a child that has some association with him.

As the anthropologist W. E. H. Stanner has described it, 'the personal names by which a man is known are something more than names. Native statements suggest that names are thought to partake of the personality which they designate. The name seems to bear much the same relation to the personality as the shadow or image does to the sentient body . . . Names are not symbols so much as verbal projections of an identity which is well known in the flesh. This is well illustrated by the widely reported ban upon the names of the dead.' In every part of Australia a person's name cannot be spoken for some time after his death. What is more, any normal vocabulary item – noun, adjective, verb etc. – that is similar in form to the banned name must also be tabooed. (An extreme case is that of the Tiwi where 'not only is the use of any of the names of the dead man prohibited – and this prohibition extends to all words in the ordinary language (though curiously enough not in the sacred language) which bear any resemblance in sound to any one of the names of the dead man – but there is an equally strong rule against the use of any of the personal names he has bestowed upon other people, be they his own children or the children of others'.) It can be seen why Aboriginal Australians tend to have a fair number of personal names; this is necessary so that 'at any particular time some of them will be free from any of the prevailing taboos'.

The social custom of name taboo, and the associated proscription on lexical words that have similar form, is of the utmost significance for understanding one of the ways in which Australian vocabularies change. Sometimes a proscribed noun or verb may come back into use within a matter of months, but it is more normal for it to be some years before the taboo is relaxed. Often it may be replaced by a synonym from within the language (a low frequency form thus suddenly becoming one of the most frequently used items) or by a newly coined compound; but more often a new word will be borrowed from the language of a neighbouring tribe. Even when this has happened, the original lexeme may return to everyday use, after a few years or perhaps a few decades have passed; but in other cases it will have been completely eliminated from the language, its place being taken by the borrowed item.

For instance, in 1975 a man named Djäyila died at Yirrkala and as a result the common verb *djäl-* 'to want, to be desirous of' was proscribed and replaced by *d̲ukt̲uk-*, probably a verb from another Yolŋu dialect that did have this set of meanings; *djäl-* began to be used again, by people who were not close relatives of the dead man, in 1978. In the

Western Desert language the first person singular pronoun 'I' is *ngayu*; but at Warburton Ranges a man named Ngayunya died about 1950 so that in this dialect *ngayu* was proscribed and replaced by *nganku*, a form borrowed from the special mother-in-law speech style (see 3.3). However, ten years later *nganku* was itself proscribed on the death of someone with a name similar to it, and was replaced either by *ngayu* (borrowed back from dialects where it had not been tabooed) or by *mi*, a borrowing from English.

In the Western Desert language the interrogative–indefinite *ŋana* 'who', 'what place' can be used whenever a personal name or a place name is solicited; personal and place names take the same case inflections, slightly different from those on common nouns. But this is rather unusual; in most Australian languages place names have a quite different status from personal names. In Dyirbal, for instance, there is no single noun 'name'; *dirra* or *burri* refer to 'personal name' while for 'place name' *wurra* is used. Proper names of places are often based on something that a dreamtime hero is said to have seen at the location as he first travelled through the tribal territory, exploring and assigning names to important places. For instance, the Yidinyji hero Gulnyjarubay heard people growling and grumbling at a place on the coast and gave it the name Bandi, based on the verb *bani-n* 'to grumble'. At another place he found lots of blady grass, *jirrgar*, growing and named it Jirrgarji (literally 'blady grass-HAVING'). Further on, he heard many frogs, *wiji*, cry out and so named that location Wijiy. In some communities place names that are similar in form to the name of a recently deceased person may be proscribed and replaced, but in many parts of the continent they are not subject to taboo and change in this way. Indeed, place names in some areas may well have remained unchanged for several millennia.

2.2 Tribe

Neighbouring communities in Australia often have similar kinship systems and also section/moiety organisation. Consider Pitta-Pitta, from north-west Central Queensland, which has four sections, grouped into moiety pairs as follows:

(3)	sections	gurrgila	= gubarru
		banbarri	= wurngu
	moieties	BARRGADHA	WUDHARU

Here '→' indicates the mother–child relationship; the two sections in the left-hand column are grouped into the Barrgadha moiety while the two on the right are Wudharu. It will be seen that here a child belongs to the same moiety as its mother, in contrast to the patrilineal Dhuwa/Yirritja system in Eastern Arnhem Land.

Section names similar to those are found over a wide area. Warrgamay, six tribal boundaries and 500 miles away to the north-east, has:

(4)

$$\begin{tikzcd} \text{gurrgila} \arrow[d, leftrightarrow, bend right] & = & \text{wujurru} \arrow[d, leftrightarrow, bend left] \\ \text{gurguru} & = & \text{wungu} \end{tikzcd}$$

(Note that Warrgamay has no moiety grouping, so that it is essentially a symmetric system, like the Gariyarra pattern described above.) Or again, consider the section names at St Lawrence, 600 miles and six tribes due east of Pitta-Pitta (and 400 miles or eight tribal boundaries distant from Warrgamay):

(5)

$$\begin{tikzcd} \text{gurrgila} \arrow[d, leftrightarrow, bend right] & = & \text{gubarru} \arrow[d, leftrightarrow, bend left] \\ \text{banbarri} & = & \text{wungu} \end{tikzcd}$$

Most of these names occur over a wide area of Queensland: however far an Aboriginal Australian travelled from his own community he would immediately find a place in the social system of a foreign tribe.

But if systems of social organisation and names for social divisions are pan-tribal, what then are the criteria for recognising distinct tribes in Australia? Close consideration reveals a number of factors that interrelate to characterise the unit 'tribe'. Members of a tribe regard themselves as a coherent political unit, with shared responsibility for social rites such as initiation; they have a corporate identification with a certain tract of land; and there is a name for the tribe and, more particularly, for the tribal language. There will be differences from the languages of surrounding tribes, some being taken as important shibboleths (we return to this topic in the next section). Marriages are generally arranged, according to the section system and kinship rules, within a tribe. Although each person will belong to a local group, centred on some part of the tribal territory, he can wander freely anywhere in the lands recognised as belonging to his tribe; if he wanders without sufficient reason into the territory of another tribe he may, in some parts of Australia, be putting his life at risk.

A thoughtful Yidinyji man once explained to me that Australian tribes were very much like nations in Europe. Just as a passport is needed to cross from France into Germany, so an Australian should have a 'local passport' – for instance, a message stick announcing an intertribal corroboree to be held in the near future – as safe conduct. He explained that each Australian nation had its own language; this would sometimes have a degree of intelligibility with the language of the next nation and sometimes not.

In some parts of Australia it is difficult to recognise a political unit 'tribe' – this is so in the Western Desert, where there are many local groups each ranging over a wide area and showing dialectal similarities with all their neighbours, and in Eastern Arnhem Land and western Cape York Peninsula, where patrilineal clans are the largest permanent sociopolitical unit. Even in areas where 'tribes' can be recognised, none of the criteria we have given can be taken as a hard and fast rule. There are, for instance, always some marriages across tribal boundaries (although these must still follow the moiety/section constraints). In some regions there must be formal reciprocity – if a Yidinyji man married a Ngajanji woman, then a match should also be arranged between a Ngajanji man and a Yidinyji woman – whereas in other regions things are more fluid. But in every community the majority of marriages are endogamous; that is, they are within the same tribe. In some regions it was permissible for members of one tribe to hunt outside their own territory; but they would still spend most of the year on land that they consider their own, amongst places to which their spirits are linked by conception beliefs and the like.

Tribal territories were generally centred on sources of water and food; a community would typically live on both sides of a river or lake with boundaries lying somewhere in the infertile mountain ranges or deserts that often separate water features. Exact boundaries can be difficult to determine, there being a no-man's land in the inhospitable country between the central locations of two neighbouring tribes. (It was unusual to find tribal boundaries running along a river, although this was sometimes encountered in richly vegetated and well-watered regions.) Tribal lands were often ecologically heterogeneous, perhaps involving a strip of swampy land on the coast and a tract of higher, hilly country on the adjoining tableland.

We have mentioned that ownership of particular tracts of land is associated with 'clans' (generally, patrilineally related). People lived in local groups, each consisting of men, their wives, children and extended families; unattached people would live and travel with a close relative and his (or her) family. The membership of local groups was quite fluid and variable but would normally include a number of men of the clan 'owning' the land on which the group resided for most of the year and after which it was named – we find Gulgi+barra 'sand people', living at the seaside, Bunda+barra 'mountain people', and so on. Several local groups would assemble in one part of the territory for a month or so at a time, when there was a profusion of food available there; a series of dancing corroborees and other social events would then be arranged, as different segments of the tribe exchanged news of what had been happening during the year.

The tablelands local group of an east coast tribe, say, might throughout the year have more contact with the tablelands local group of a neighbouring tribe than with other parts of its own tribe; people living in adjacent, ecologically similar regions would be likely to have frequent intercourse and do a fair amount of trading. But they would still feel themselves to be part of a certain tribe even though there might only infrequently be a full tribal gathering. The use of a common tribal name and language name indicated this allegiance which was reinforced by the propensity for endogamous marriages, typically between different local groups of a single tribe. There were many other indications of tribal unity and feeling. To mention just one, it has long been known that Aboriginal Australians may attribute the illness or death of any person to sorcery on the part of someone – in most regions this would be someone in another tribe; various ceremonies and procedures then followed to try to track down the culprit and avenge the death.

There are, as we have mentioned, a fair proportion of inter-tribal marriages so that a child will often have parents speaking different languages; he will use his mother's tongue in the earliest years but should normally switch to his father's language before reaching puberty. There is a great deal of multilingualism in Australian communities, due to intermarriage, meetings at intertribal gatherings, and simply interest in acquiring new languages. Most people will speak at least two languages (and probably understand one or two others) while some may speak six or seven. Even so, each individual will clearly recognise that he belongs to one tribe and that one language is 'his'; the other tongues he knows – even though he may conceivably be more proficient in them, or prefer using them – are those of other tribal groups.

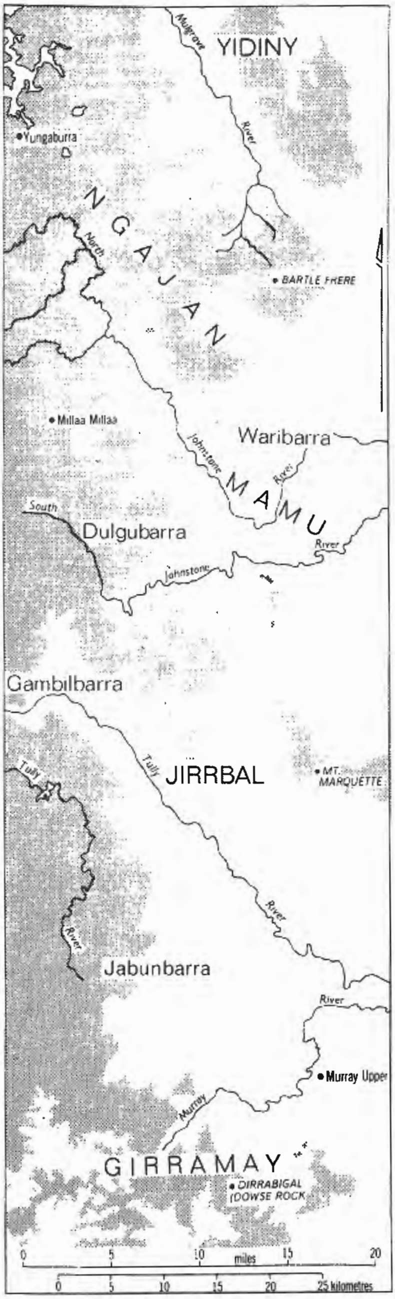
2.3 Language

On the second day of my fieldwork in North Queensland, in October 1963, I was talking to Chloe Grant in her house on the southern bank of the Murray River. She explained that there were two local languages – Jirrbal, on the northern side of the river had *bana* for 'water' and *buni* for 'fire' while Girramay, on the southern side, had *gamu* 'water' and *yugu* 'fire'. (This is one of the places where a tribal boundary actually runs along the river, for a few miles.) However, on further investigation it became apparent that there was relatively little difference between Jirrbal and Girramay – they have almost identical grammars and over 80 per cent of their vocabularies are the same. In linguistic terms, Jirrbal and Girramay are mutually intelligible dialects of one language; they differ about as much as do Scottish English and English English.

But those differences that do exist between Jirrbal and Girramay are looked upon as highly significant, and taken as indices of tribal affiliation. This is rather similar to the handful of verbal differences that are taken as identifying someone as a Scotsman, rather than an Englishman – a Scotsman will not use *lake*, employing instead *loch* and pronouncing it with a final velar fricative [x], a sound that English English lacks. Anyone who uses *bana*, *buni* and a few other indexical items shows himself to be a Jirrbalŋan (as the tribe speaking Jirrbal is named); anyone employing *gamu*, *yugu* and so on identifies himself as a Girramaygan (see also 3.1). In fact these linguistic factors are probably the most important and powerful criteria for tribal membership.

The word 'language' can be used in two quite different ways. First, in everyday discourse people identify themselves as speakers of a particular language$_1$, and make judgements as to whether their way of speaking is 'the same language$_1$' or 'a different language$_1$', from another's mode of speech. Thus, someone from the West Country of England will say that he employs the same language$_1$ as (but a different dialect from) a Yorkshireman; and a Dane and a Norwegian will maintain that they speak different languages$_1$.

The second sense is the technical usage of linguists – two modes of speech are regarded as dialects of a single language$_2$ if they are mutually intelligible. A somewhat wider technical definition of 'language$_2$' is that it involves a chain of mutually intelligible dialects – there need not necessarily be intelligibility between dialects at the extremes of the chain, but each individual dialect must be mutually intelligible with its



Map 4. An area of North Queensland (enlargement of a region from the central southern part of map 8)

geographic neighbours. It is most economical to write just one overall grammar for a language$_2$, with notes on minor dialectal variations.

Everyday identification of languages$_1$ often depends on political considerations and does not always yield the same results as the linguist's recognition of languages$_2$. For instance, Danish and Modern standard Norwegian are very similar; they are said to be two different 'languages$_1$' mainly on the grounds of political nationalism. In fact, most linguists would say that Danish, Norwegian and Swedish – all of which are mutually intelligible – constitute a single language$_2$. The linguistic differences between Danish and Modern standard Norwegian are probably no more than those between West Country and Yorkshire English (which are regarded by their speakers as dialects of a single language$_1$) and certainly less than the differences between geographically distant dialects of German.

The political motivation is clearly to recognise one language for each separate nation. This is exactly what is encountered in Australia – each of the 600 or so distinct tribes considered itself to have a different language$_1$ from its neighbours. In many cases the speeches of neighbouring tribes are really dialects of a single language$_2$, in the technical sense (just as Danish, Norwegian and Swedish are); in other instances neighbouring tribes do speak quite different languages$_2$, that are not mutually intelligible. Thus the 600 tribes, each with its own language$_1$, speak between them about 200 different languages$_2$; we need in all 200 grammars and dictionaries, each with notes on minor variation between dialects (that is, between the different languages$_1$ that make up each language$_2$).

Take as a typical example the area of North Queensland we have already mentioned, illustrated in map 4. From south to north there are five languages$_1$ – Girramay, Jirrbal, Mamu, Ngajan and Yidiny. The first four are dialects of a single language$_2$; each has about three-quarters or more of its vocabulary in common with its neighbours and there are only very minor grammatical differences. Girramay, Jirrbal and Mamu have identical phonologies while Ngajan differs from the others in having a contrast between long and short vowels (in Ngajan a vowel-plus-*l*/*r*/*y* has been replaced by a long vowel in a rather straightforward historical change – see 7.3). There are a few differences of pronunciation, reminiscent of those between different dialects of English (or any other language) – see 2.4; these are quite minor. Yidiny is, in contrast, a totally different language$_2$ – Yidiny and Ngajan have only about 29 per cent common vocabulary – these are mostly recent borrowings, in both directions – and the grammars are totally dissimilar, as different as those of English and French.

Girramay, Jirrbal, Mamu and Ngajan are, then, distinct $languages_1$ for their speakers; but from a linguistic point of view they are dialects of a single $language_2$. I was able to write an overall grammar of this language – for which I fairly arbitrarily adopted the name 'Dyirbal' (see 2.4) – with notes on dialectal variation. Yidiny is a quite different $language_2$, demanding a separate grammar. But to members of the tribes the minor differences between Ngajan and Mamu are just as significant as the major differences between Ngajan and Yidiny; they play the same role in identifying someone as a member of the Yidinyji tribe, or the Ngajanji tribe, and so on. This is similar to analogous situations in Europe where the differences between Swedish and Norwegian, on the one hand, and Swedish and Finnish, on the other, are in political terms equally important, quite independent of the linguistic similarity between Swedish and Norwegian and the great difference between Swedish and Finnish. Each Australian tribe (or, as my insightful informant preferred to describe them, 'nation') is looked upon as a distinct political entity, that is characterised by having its own $language_1$.

The kinds of linguistic difference that exist between $languages_1$ which are dialects of a $language_2$ can vary. One extreme is found among the ten or so tribes in the Darling River basin in north-west New South Wales; they have almost identical vocabularies (90 or even 95 per cent of words recurring from tribe to tribe) but apparently quite a number of grammatical differences. There was enough common grammar, however, for mutual intelligibility; these ten tribal $languages_1$ are usually referred to as dialects of the 'Baagandji $language_2$'. The opposite extreme is encountered in the Western Desert where some neighbouring tribes have very similar grammars but rather more vocabulary differences (sometimes only 70 per cent or a little less common vocabulary); once again there is mutual intelligibility so that we can talk of the 'Western Desert $language_2$'. Most dialectal differences fall somewhere between these two poles in being distributed more equally between grammar and lexicon. Jirrbal–Girramay differences involve a few common words – 'head', 'ear', 'to eat' in addition to 'fire' and 'water' – some less common words, and a number of grammatical points: Girramay has future tense inflection *-jay* whereas Jirrbal has *-ny*, another verbal suffix is *-ŋarra* in Girramay but *-ŋurra* in Jirrbal, there are some differences in demonstratives, and so on. But overall these are minor by comparison with the common grammatical and lexical core, which makes it easy for a member of one tribe to understand and speak the dialect (= language$_1$) of the other.

It has been suggested in recent years that there are in Australia extended chains of dialects, stretching across many hundreds of miles, each mutually intelligible with its neighbours, so that it is difficult or impossible to draw firm language$_2$ boundaries. This is untrue. Only in the Western Desert and in Central/South Queensland are there very long dialect chains; in the former area they are clearly all dialects of a single language. And in every case I have investigated it is a relatively easy matter to decide whether a particular tribal boundary is a boundary between different languages$_2$, or whether it just separates off dialects of one language$_2$. (This misinformation came from reliance on vocabulary counts; this is further discussed in chapter 8. Any investigation of language$_2$ boundaries must, of course, place equal reliance on grammar and on vocabulary.)

Even when dealing with long-extinct tribes of the south-east, where only scanty written records are available, there is never any difficulty in deciding what was one language$_2$. In Victoria, for instance, the tribal language$_1$ Jab Wurrung around Mount Rouse was contiguous with Jaja Wurrung around Franklingford and Maryborough, and this bordered on Watha Wurrung whose territory included Lal Lal and Buntingdale. Examination of vocabularies and grammars reveals that the first two were dialects of a single language$_2$ (H1 on map 7 in chapter 8), while Watha Wurrung must have constituted a separate language$_2$ (H2 on map 7). This inference is supported by a report of E. S. Parker, Assistant Protector of Aborigines at Franklingford, who records that Rev. Mr Tuckfield from Buntingdale preached to his wards on 2 May 1840 but 'the Widouro [Watha-wurrung] language, I found, was understood only by a few [bilingual] people, and Mr. Tuckfield, who is acquainted only with that language, could not be understood by the majority. Many of the words are identical, but others so essentially different as to make the two dialects distinct languages.' Here, as elsewhere in Australia, there is no difficulty in distinguishing between language$_2$ and dialect.

The boundary between two languages$_2$ will always run along a tribal boundary; but not every tribal boundary is a language$_2$ boundary.

Within a tribe each local group – spending the major part of the year in a particular portion of the tribal territory – will, as a rule, speak a slightly different dialect from each other local group. Thus if a language$_2$ is, say, shared between three tribes there may be at least a dozen distinguishable dialects, one for each of the local groups. In such a circumstance it is not always the case that the speech of one local group will be most similar to that of some other local group within the same tribe; it may well be slightly closer to the speech of a local group of a neighbouring tribe (speaking the same language$_2$) that lives in adjoining and ecologically similar territory.

We can quote a specific example from North Queensland. Mamu and Jirrbal are the two closest languages$_1$ within the multi-tribe 'Dyirbal language$_2$'. In map 4 we show the location of the two Jirrbal local groups – Jabunbarra 'coastal people' associated with the coastal swamps, plains and foothills, extending as far south as the Murray River, and Gambilbarra 'tablelands people' who lived for most of the year in the high tablelands forests in close proximity to the Dulgubarra 'scrub people' local group of Mamu-speakers. Next to the north were the Waribarra 'gorge people' Mamu local group, who inhabited the precipitous gorges of the North Johnstone River. The dialects of Gambilbarra Jirrbal, Dulgubarra Mamu and Jabunbarra Jirrbal are all very close, with about 90 per cent common vocabulary and almost identical grammar. But investigation of the few differences there are reveal that Gambilbarra is slightly closer to Dulgubarra – the speech of a local group from another tribe – than it is to Jabunbarra – the dialect of the plains group from its own tribe. This can be shown by a representative sample of lexical differences:

	Jirrbal Jabunbarra	Jirrbal Gambilbarra	Mamu Dulgubarra
'head'	*diŋgal*	*diŋgal*	*wumbu*
'black bream'	*bugal*	*bugal*	*jabu*
'woman'	*jugumbil*	*yibi*	*yibi*
'scrub turkey'	*guyjarri*	*muŋarra*	*muŋarra*
'firefly'	*yugiyam*	*wugiyam*	*wugiyam*
'moon	*gagara*	*gagalum*	*gagalum*

When I noticed that Gambilbarra speech was a little closer to Dulgubarra than to Jabunbarra – and speakers agreed that this was so –

I asked on what grounds Gambilbarra and Jabunbarra were regarded as two parts of a single tribe, and Dulgubarra as belonging to a different tribe. The answer was that the Jirrbalŋan were 'all blooded'; that is, the predominantly endogamous pattern of marriage meant that a Gambilbarra would normally acquire a spouse from within either Gambilbarra or Jabunbarra local groups – from within the Jirrbalŋan tribe.

The situation just described would only be likely to be encountered when two tribes had very similar speech; it could also be the first seed for a later splitting of Jirrbal into two tribal groups (see 2.5). But the point is that, although a language$_2$ boundary always runs along a tribal boundary, those tribal boundaries that are not language$_2$ boundaries need not be the major dialect divisions within the language$_2$ area; there may be more isoglosses lying along a mountain range that divides up several tribal territories than there are lying along a tribal boundary. But despite this, some pan-tribal linguistic features – such as *diŋgal* for 'head' in Jirrbal – the use of common language and tribal names, predominantly endogamous marriage, and the like, DO define tribes as the major political groupings recognised by Aboriginal Australians in most parts of the continent.

There is of course wide variation over the 600 tribes that occupy or occupied the 3 million square miles of the Australian continent. One of the most fascinating and unusual linguistic phenomena is the difference of speech styles described by Frances Morphy for members of different moieties in Eastern Arnhem Land. In one region, members of the Dhuwa moiety say that they speak 'Dhuwal language' whereas the Yirritja say they speak the 'Dhuwala language'. Dhuwal and Dhuwala in a given area have almost identical grammar and vocabulary but consistently differ in one phonological feature. Taking Dhuwala forms as basic, words in Dhuwal can be derived from them by a deletion rule:

> the final vowel of a word is deleted if the word is more than two syllables long, if there is only one consonant between final and penultimate vowels, and if the word is – or ends in – a grammatical morpheme.

Examples of words in the two styles are:

		Dhuwala	Dhuwal
(6)	first person singular inclusive pronoun 'me and you'	*ŋali*	*ŋali*

		Dhuwala	Dhuwal
(7)	first person singular exclusive pronoun 'me and him/her'	*ŋilinyu*	*ŋiliny*
(8)	'baby'	*yothu*	*yothu*
(9)	'baby-HAVING' i.e. 'pregnant'	*yothu + mirri*	*yothu + mirr*

In (6) and (8) the words have only two syllables and so there is no deletion (in addition, (8) is a lexical element, which would not in any case undergo deletion). But (7) is a trisyllabic grammatical word and the final vowel is lost in Dhuwal. In (9) the final vowel of the grammatical suffix is likewise lost. As can be imagined, the two moiety speech styles sound quite different; Dhuwal words often end in a consonant and its sentences have a more clipped, staccato sound. We can remember that these speech styles are used by two moieties within the same community – a Dhuwa woman would address her Yirritja husband in Dhuwal, but be answered in Dhuwala.

The loss of final vowels in Dhuwal does not in most instances lead to ambiguity. But there is one area where it could lead to communicative difficulty; this concerns one type of demonstrative. Consider part of the Dhuwala paradigm:

	'this/here'	'that/there'
ERGATIVE case	*dhiyaŋu*	*dhiyaŋi*
NOMINATIVE case	*dhuwala*	*dhuwali*
LOCATIVE case	*dhiyala*	*dhiyali*

If the final vowel deletion rule were applied here, speakers of Dhuwal would be unable to distinguish 'this' from 'that'. What happens is that the rule does apply to the 'this/here' column, but NOT to 'that/there' forms. Dhuwal speakers use *dhiyaŋ*, *dhuwal*, *dhiyal* but *dhiyaŋi*, *dhuwali*, *dhiyali*. The vowel-dropping rule – which is a linguistic marker of social distinction – is suspended in the one case where its application would seriously impair communication.

2.4 Language and tribal names

There are many examples in Australia of a tribal name being derived from the language name; the reverse is seldom encountered. This derivation may involve a productive affix 'HAVING' that can form an adjectival stem from any substantival root. For instance, the tribal designation Yidiny+ji means literally 'having the Yidiny language'; the Yidiny comitative suffix *-ji* is discussed in 10.4. In other cases the tribal name may involve the language name and a nonce suffix that does not appear outside this word – the Jirrbalŋan tribe speaks Jirrbal and the Girramaygan tribe speaks Girramay, no other instances of *-ŋan* or *-gan* being known in these two languages. The final alternative is for the language name simply to be used also as a tribal description – thus I was told that the tribe speaking Mbabaram could only be called Mog Mbabaram 'Mbabaram men'.

Each community in Australia – as in many other parts of the world – considers its own language to be the ideal way of speaking, and looks down on all other tongues. Descriptive labels were sometimes adopted as language_1 names: two languages in the Cape York Peninsula were called Gugu-Mini (literally 'good language') and Gugu-Warra ('bad language'); the latter name was presumably only used by speakers of surrounding languages. Some language names are simply compass directions e.g. Guwa 'West', presumably a label introduced by their neighbours to the east.

Aboriginal Australians typically characterise local languages in terms of paralinguistic features such as voice quality, speed of delivery, degree of breathiness, and the like. Whenever a friend called in to see Chloe Grant (whose first language was Jirrbal) while she was working with me, she would launch into a description of the languages of the area and their differences, imitating each in turn. She would adopt a deep voice for Mamu, slowly drawling the words (and invariably adding *-mi* – a perfective relative suffix that occurs infrequently in Mamu but is not found at all in Jirrbal – to every verb!); for Yidiny she would lengthen vowels and often nasalise them too, producing a quite different timbre from her normal speech. In some areas description of the paralinguistic sound of a language has been adopted as its institutionalised name. James Dawson lists names of languages in south-western Victoria – Chaap wuurong (Jap wurrung) 'soft or broad lip', Peek whurrong 'kelp lip', Kirræ wuurong 'blood lip', Kuurn kopan noot 'small lip' or 'short pronunciation', and the like.

I mentioned in the last section that a certain linguistic feature may be taken as indexical of tribal membership. It is, in fact, not uncommon for a language_1 name to be based on such a word. In the Western Desert language_2 the suffix *-tjarra* 'HAVING' occurs in most language_1 names – Pitjantjatjara 'having the word *pitjantja-* "come"', Ngaanyatjara 'having the word *ngaanya* "this"', and Nyanganyatjara 'having the word *nyanganya* "this"', amongst many others. Guugu Yimi+dhirr 'language this+HAVING' – the language recorded by Cook and Banks in 1770 – is, literally 'the language with *yimi* "this"'.

By far the most frequent linguistic form to be used as the basis for a $language_1$ name in Australia is that meaning 'no'. From Wira+dhuri 'no+HAVING' in Central New South Wales to Biyay+girri 'no+HAVING' in north-east Queensland there are names that involve the form for 'no' and the comitative suffix. Over a considerable area in northern Victoria and southern New South Wales the form for 'no' is simply reduplicated to make the language name – Yota-Yota, Yitha-Yitha, Wemba-Wemba, among others.

It is interesting to note that there need be no homogeneity of naming principle over all the tribal $languages_1$ that make up a linguistic $language_2$. A classic example is the $language_2$ that covered all of western Victoria north of the coastal fringe, comprising a score or so tribes (language H1 on map 7 in chapter 8). The southern members of this group employ descriptive $language_1$ labels involving as second element *wurrung* 'lip, speech' – we have already mentioned Jab Wurrung and Jaja Wurrung; they employ the same naming principle as dialects of neighbouring $languages_2$ (F2, H2 and H3 on map 7). The northern tribes of the vast western Victoria $language_2$ have $language_1$ names involving reduplication of 'no' – Wemba-Wemba, Baraba-Baraba, Madhi-Madhi and others; these dialects are named on the same principle as neighbouring languages in southern New South Wales and north-central Victoria – Yitha-Yitha, Yota-Yota, Yabula-Yabula – which belong to quite different $languages_2$ (E, J and I on map 7). Here, as elsewhere in the continent, the isogloss separating different principles of naming for tribal $languages_1$ runs right through the middle of a $language_2$. Some language names have no known etymology – Warlpiri and Jirrbal fall into this category. For others there may be a mythic clue (although it is difficult to know how to evaluate these); for instance, the Yidinyji tell of how their tribe first came into its present territory, led by a man called – in some versions of the myth – Yidi.

Whereas for tribes the $language_1$ name is usually primary (often describing some significant feature of the language) with the tribal name frequently being identical to it or else derived from it, local groups within a tribe are generally named according to the type of terrain with which they are associated, or by certain significant places in the region (occasionally, they may be named by an important totem). Over much of Queensland the derivational suffix *-barra* 'belonging to, pertaining to' is used to derive local group names from common nouns describing types of geographical feature: we have already mentioned Gulgibarra 'people associated with sand' in Yidinyji, Waribarra 'people associated with gorges' among Mamu speakers, and so on. There seems never to be a separate name for the dialect of a local group; people have to talk of 'Waribarra speech', or sometimes simply abbreviate and say 'he is talking Wari'.

Finally, it is important to stress once more that there was not usually any name for a group of tribes whose speech was mutually intelligible, nor for the $language_2$ that we can – on linguistic criteria – assign to them. It is necessary to choose some label for each $language_2$, and this usually has to be done fairly arbitrarily by the linguist. The tribes that identify themselves as speaking Girramay, Jirrbal, Mamu, Ngajan, Gulŋay and Jirru plainly make up a single linguistic community and for this $language_2$ I selected the name Dyirbal (a variant spelling of Jirrbal, chosen because this dialect was central and influential, and is today spoken by the largest number of people). The employment of a cover term for the speech of several tribes – here or elsewhere in the continent – is a linguistic abstraction, and one which is not necessarily regarded as particularly felicitous by speakers of the language.

2.5 Tribal and language split

It appears that the size of Australian tribes ranged from a few hundred to a thousand or so, distributed around a mean figure of about 500. The anthropologist J. B. Birdsell has carried out a comparative study of hunting and gathering people in other continents and found that 500 is the normal average size for a tribe of hunter-gatherers in any part of the world. If a tribe were very much smaller there would not be enough people to make workable the social system, in terms of ritual obligations, marriages arranged according to kinship constraints, and the like. If it were very much bigger the tribal community – split up as it must be into local groups ranging over a wide territory in search of food – would be too dispersed to function as a cohesive political unit.

Birdsell has shown that it might only have taken something like 2,000 years after the arrival of the first immigrants in North Australia for all parts of the continent to have been populated to the limits of their food-bearing resources. (We can recall that archaeological evidence shows man to have been in the continent for more than 30,000 years.) There is evidence that, if unlimited food and land is available, population will roughly double each generation. As a tribe grew in size so that it greatly exceeded the norm of 500 it would naturally split into two groups, each of which might move in a different direction in search of new food supplies. Only after the whole continent had been peopled would controls have been introduced, to ensure that the population was maintained at a fairly stable level.

During the tens of millennia since a full complement of tribes was first established across the continent, there must have been many examples of tribal split and merger. There have been profound physical changes: geographers believe that – in terms of the varying water resources – the land mass which supported about 300,000 people in 1788 might have provided for substantially less than that number 20,000 years ago, but could well have supported rather more than the 1788 population 10,000 years before that. Even in times of relative climatic stability there would have been a fair amount of political movement. Periodic drought and disease could have caused the decrease in size and consequent merger of neighbouring local groups, which could have originally belonged to different tribes. And there are always some tribes that are successfully aggressive, gradually extending their own territory at the expense of their neighbours and increasing in size until they attain a population that naturally splits into two new tribal groups.

Tribal split and language split are intimately connected. We have emphasised that 'having the same language$_1$' is a major consideration in a number of local groups identifying themselves as a single tribe. If a member of an average-sized tribe dies then his name – and any common noun, verb, adjective or pronoun similar in form to it – is likely to be tabooed throughout all local groups within the tribe. Predominantly endogamous marriage helps to maintain linguistic unity within the tribe. Now if two local groups in a tribe maintained close social relations during all seasons of the year a tribal split would be most unlikely. Split tends to occur when local groups live for most of the year in different terrains; each will see more of that local group of the next-door tribe which lives in the same kind of country than of their own tribesmen. Death taboo may sometimes not spread across the whole tribal community and, quite apart from this, there is always a tendency for linguistic features to be borrowed between local groups which have constant contact with each other. The dialects of the local groups in an original tribe may grow further apart, so that the number of linguistic features they share decreases (in some cases, mutual intelligibility may significantly decrease). If there is at the same time an increase in numbers in each local group – leading to more marriages entirely within the group, and so on – then it is likely that the political links between groups will be lost, with each gradually coming to think of itself as a self-contained political unit: a new 'tribe', with its own language$_1$.

There are many advantages to a tribe having an ecologically varied territory. All local groups can assemble, say, on the coast in winter when food is plentiful there, also avoiding the mountain frosts; and all may gather in the hills for a month or so in the summer, when tableland plants are in flower, fortuitously escaping the humidity and insects that prevail at that season on the coast. But this arrangement does have an in-built propensity towards split – local groups of a single tribe will spend at most a few months together during the year and may in time grow apart, each moving closer to the groups from other tribes with whom they live in more constant contiguity.

Examination of the social interactions and linguistic relations between neighbouring Australian tribes can be most revealing. Suppose that tribe B is situated between A and C and that it is linguistically very close to C (i.e. B and C speak dialects of a single language$_2$), but quite different from A (i.e. B and A are totally different languages$_2$ with just a little common vocabulary due to recent borrowing). Generally, it is found that B has closer relations with A than with C – there will be more trade, social get-togethers, and intermarriage with the linguistically more distant neighbour. We can infer that there must originally have been two tribes, A and B+C. B and C would have been recognisable as local groups of a single tribe through shared land ownership, predominantly endogamous marriage (a person from B would normally obtain a spouse from C), and a shared language$_1$. But local group B gradually established closer links with A and became more and more estranged from C. It is likely that social separation between two local groups – and the consequent closer affiliation of each with neighbouring groups from different tribes, who speak different languages – is a necessary condition for them to split into two distinct tribes, each with its own language$_1$.

This situation can be exemplified from map 4 where the Ngajanji tribe appear to have had more social contact with the Yidinyji – speakers of a quite different language$_2$ – than with the Mamu, whose language$_1$

they could readily understand. (The high degree of bilingualism common in Australia meant of course that a number of Ngajanji would speak Yidiny as a second language, and vice versa.) We can reconstruct that there must at one time have been a single tribe of Dyirbal-speakers, living somewhere in the south of the present language$_2$ area; it increased in size, spread northwards and individual local groups gradually took on the status of separate tribes. The antipathy that the Ngajanji must have had towards the southern local groups of the original tribe is continued today. Note also that the Ngajanji have a two-moiety system like the Yidinyji and tribes to the north, whereas the other Dyirbal-speaking tribes and their neighbours to the south and west have a four-section system; and that the tribal name Ngajanji resembles Yidinyji in involving *-ji*, the comitative suffix ('with') in Yidiny (the corresponding affix in Ngajan is *-ba*).

Many anthropologists nowadays tend to be sceptical of the attempt to seek an historical basis of any kind in traditional stories and myths. Nevertheless, it is surely significant that many tribes along the south-eastern and eastern coasts have stories recounting how the shore-line was once some miles further out; that it was – on the north-east coast – where the barrier reef now stands. This is where the coastline actually DID run some 10,000 years ago. There are other stories concerning the activity of volcanoes that last erupted at least 10,000 years ago, and the like.

From a linguistic point of view the most interesting traditional stories are those that tell of prehistoric movements of peoples; where such legends are known, they often correlate with what can be deduced from linguistic comparison. Perhaps the most fascinating example concerns a group of five languages that were spoken along the Murray River, from its mouth at Lake Alexandrina in South Australia up to Mildura in Victoria (languages A–E on map 7 in chapter 8). Although the data on these now extinct languages is scanty, they do seem to comprise a natural group sharing a number of common features and showing many differences from their neighbours on either side. Each language was most similar to its immediate neighbours along the river with one exception – Yaralde (A on map 7), at the mouth of the river, shows more points of likeness to Yitha-Yitha (E on map 7), the language furthest upstream, than it does to any of the three intervening tongues. What makes this linguistic relationship so interesting is the well-authenticated Yaralde legend describing how the tribe used to live further up the river, but travelled down it until they reached the sea, and settled there.

3

Speech and song styles

3.1 Oral literature

Every Australian tribe has a rich heritage of traditional stories that have undoubtedly been handed down from parent to child over a very long period (just as the story of the Trojan wars, which took place in the twelfth century B.C., is believed to have been relayed entirely by word-of-mouth for at least 400 years, until it was eventually written down, in Greek). The Australian oral tradition delineates what is conventionally called 'the dreamtime'; these legends function simultaneously as creation story, and as explanation and description of political systems and of the need for established obligations, ceremonies and rituals.

We cannot do better than quote Meggitt's account: 'The Walbiri, like many, perhaps all, other Australian Aborigines, assert the existence in the far distant past of an era, the dreamtime, during which the universe as they know it took shape as a result of the actions and qualities of totemic beings, including super-human heroes; that is, the dreamtime entities, [whether in the shape of animals or of people], brought order, meaning, and obligation to the world, so that all of its constituent elements, natural and human, became amenable to common lawful processes and regularities that are still operative. The dreamtime beings effected this transformation partly by performing for the first time the rituals that Walbiri enact today and partly by simply giving names to the flora, fauna, and topographical features they encountered and sang about in their travels. Part of this dreamtime bequest is the very culture the people now possess – their technology, social groupings, rituals, moral and jural norms, and, not least, their metaphysical monism that regards man, society and nature as interlocking and interacting components of a larger, functionally integrated totality . . .'

Typically, every community has a number of cycles of stories and songs, each concerning some particular group of dreamtime heroes whose travels are associated with a particular part of the tribal territory. For instance, Ronald Berndt describes the Djaŋ'kawu myth that is associated with the Dhuwa moiety amongst Yolŋu-speakers in Eastern Arnhem Land. There is a prose narrative and about 200 songs (each of about 10–40 lines) portraying the explorations of three ancestral beings, two sisters and a brother. The sisters were believed to be projections of the sun, and were guided by the morning star; since at that time there were no marriage rules, moieties or other prohibitions they lived in an incestuous relationship with their brother, producing many offspring who peopled the countryside. These three heroes came from an island in the east – from which the morning star is also believed to have been sent – and brought to Arnhem Land many sacred emblems, which have ritual significance today. The myth and songs are known to everyone in the community; some of the associated rituals and the emblems themselves are officially restricted to initiated men, although in practice women do tend to know a good deal about them.

W. L. Warner has described another Yolŋu cycle, concerning the Wawilak sisters, that has comparable complexity and interrelates with the Djaŋ'kawu story (the Wawilak being daughters of the Djaŋ'kawu). There are other sets of stories and songs, with their associated rituals, that further interrelate in what is without doubt one of the richest, most articulated traditions of oral literature from any part of the world. Tribes in other parts of Australia have a comparable heritage. Meggitt has recorded about 200 songs in the Mamandabari sequence among the Warlpiri. 'A number of these appear several times in the cycle as the heroes return through localities passed on their outward journey or meet certain natural or dreaming species at different places. The number of songs devoted to a particular incident or topic ranges from one (for instance, the use of astringent sap) to as many as 25 (for example, the performance of rain ceremonies at Gulbulunu). About 70 different topics appear in the songs. There are also certain "punctuating songs" that should precede and close each myth episode and each act in the Gadjari ceremonies.' A number of local groups would gather together for the performance of one of these song cycles, and its associated myth and rituals, which often took five days or longer.

We discuss, in the next section, the different song genres that are found in Australian communities – each has a special name and shows characteristic linguistic and musical features. There are not, in the same way, fixed genres of oratory. But a number of different speech styles can roughly be discerned. For instance, a distinctive form of political oratory is found in Arnhem Land, where a man will deliver a harangue about some social issue to an assembled gathering (who may be talking among themselves, giving an impression of lack of interest, but are in fact listening quite carefully). No study has yet been undertaken of this speech style.

Although any adult might tell a traditional legend, every community has its favoured story-tellers, who are good at remembering each detail of a traditional tale and particularly adept at giving life and immediacy to each story. These raconteurs may adopt a dramatic speech style that has special phonological characteristics; in Guugu Yimidhirr, for example, it involves pronouncing nasals with stop release, a tendency to expand clusters of two consonants by the insertion of an unstressed *a*, together with generally exaggerated stress and elaborately lengthened vowels. Many languages have a number of grammatical devices which are primarily employed in story-telling: in Wik-Munkan there is a special clitic *-ey* which is added to the end of a sentence at particular tension points in a discourse (the discovery of a villain, for instance). Sometimes the insertion of a particle – with a meaning like 'up' or 'return' – or the use of a marked intonation pattern in the telling of a myth would signal the position in sequence of a particular song or ritual enactment (and would occur even when the story was being told without these associated elements).

A particular story and/or song cycle may be known by many tribes over a quite wide area; each will have its own version of the legend, adapted to its own geographical and social situation (and will criticise its neighbours for having got the story muddled and wrong!). There is, for instance, a Mamu legend describing how the rainbow – who could turn himself into a carpet-snake – had the only fire in the world, which he jealously guarded on a high mountain ledge. A group of birds – believed to have had human characteristics in the dreamtime – tried, one after the other, to snatch it from him but each time he heard their approach and knocked them back; each bird disguised itself in a certain way for the attempt, explaining its present-day colouration and stance. Finally, the spangled drongo, Bajinjilajila, was prevailed upon to make an attempt, and was painted with charcoal as a disguise. He landed so suddenly and quietly – as this bird always does today – that the rainbow barely felt the flutter of his wings. Bajinjilajila snatched the fire and flew off with it, hitting it against the Moreton Bay tree, against the bonewood tree, and against the crowfoot tree; this explains why wood from these trees burns so well today. The rainbow–serpent hit out at the bird as he was flying off but only nicked its tail, explaining why today the Bajinjilajila has a split tail. Now this same legend is known to the Girramaygan tribe, living some 40 miles to the south and speaking another dialect of the same language. Every detail is the same in Girramay except for the ending – the rainbow–serpent struck out at the bird (called simply Bajinjila in Girramay) but missed him and hit instead a mountain called Dirrabigal (see map 4), explaining why today this mountain has a split top. The myth has been adapted to describe a prominent and important geographical landmark in Girramaygan country.

The language employed in myths can be indicative of tribal jealousies, particularly the intense rivalry that is often encountered between neighbouring tribes speaking dialects of a single language. Chloe Grant once told me, in the Dyirbal language, the story of the origin of water. At one time the only water was hidden by the blue-tongue lizard, and the other animals – who were all 'dreamtime people' – were plotting to steal it from him; this was eventually achieved by the smallest animal of all, a mouse. The narration was in the Jirrbal dialect and all the animals spoke in Jirrbal save for the villain, the blue-tongue lizard, who spoke in Girramay. Thus, a typical interchange involved Gujila, the bandicoot, asking, in Jirrbal:

(1) *bana* *ŋinda* *wunyjan* *buyban*
water + ABS you + NOM WHERE + ABS hide + PRES
'Where do you have the water hidden?'

And Baŋgarra, the lizard, replying in Girramay:

(2) *maya,* *maya* *gamu + biray.*
nothing nothing water + WITHOUT + ABS
gulbirra *maja* *ŋaja*
kangaroo-grass + ABS chew + IMP I + NOM
'There's nothing, no water. I have to chew kangaroo-grass [for the moisture it contains].'

Note the different lexical items for water – *bana* in Jirrbal and *gamu* in Girramay (cf. 2.3). In addition, the verb 'hide' is *buyba-l* in Jirrbal and *muynba-l* in Girramay, 'chew' is *baja-l* and *maja-l* respectively, the interjection 'no, nothing' is *yimba* in Jirrbal but *maya* in Girramay, and for the privative suffix 'without' Jirrbal has *-gimbal* corresponding to Girramay's *-biray*. Pronouns *ŋinda* 'you' and *ŋaja* 'I', interrogative *wunyjan* and the noun *gulbirra* are common to the two dialects. (These two sentences contain far more differences than are typical, between what are overall two mutually intelligible dialects.)

By having Baŋgarra speak in Girramay, the Jirrbalŋan storyteller was emphasising his villainous character.

3.2 Song styles

Every Australian tribe has a fair number of distinct song styles – sometimes there are as many as a dozen genres, distinguished by musical style, the type of accompaniment, the sex of the singer, the dress and decoration of the dancers, and the like. Each song style fills a distinct social role – one type of song is performed at initiation ceremonies and rituals that are confined to initiated men (which women and children should not see, sometimes on pain of death); another song style may be confined to women's ceremonials (men should not witness these, although the penalties for infraction are likely to be less severe). Both men and women often have their own style of mourning recitative, lamenting the passing of a relative; and there are always other, secular, songs that are freely available to all members of the community, and are danced to at multi-tribal corroborees. It is not uncommon for different song styles to have distinct paralinguistic features – one may be characterised by a very breathy voice, one by a rasping tone, another by a slurred chanting style, and so on; in some genres the pitch or volume of the voice may suddenly change while in others it should be kept constant. A major difference lies in the language of the various song styles; more will be said about this shortly.

It would be out of place here to discuss the music of Australian songs and dances, and the different musical conventions of diverse song styles. Suffice it to quote the musicologist Trevor Jones on the development of music in Arnhem Land 'into a highly organised and systematic art' (not in any sense 'primitive') with a 'strong preference for complete heptatonic scales and isometric structure, the advanced use of polyphony without resorting to parallelism, the use of instrumental interludes to build a rondo-like form in some secular music, and the construction of long song-cycles and corroborees by skilfully varying basic material, together with the constant employment of a quiet, unaccented style of performance, and a highly-developed professionalism in composition, singing and instrumental playing'. Instrumental accompaniment is fairly basic but is chosen carefully and varies from one song style to another (most songs have some form of accompaniment). It may involve the banging together of two boomerangs, or of clapsticks, made from a particular type of wood that has appropriate resonance. The didjeridu, a hollowed branch or bamboo tube that is blown into, trumpet-style, is found only in the northernmost parts of Western Australia and the Northern Territory; leaf whistles, rattles and a wooden rasp occur in a few areas. Female accompaniment to songs (as sung by either sex) typically involves slapping the inside of the thighs or banging on a skin drum stretched between the legs. Most, but not all, songs have an associated dance routine, with sometimes also ritual behaviour, manufacture or use of ritual objects, and the like; but most songs can also be sung alone.

There are two basic divisions of the subject-matter of songs: traditional songs that are believed to have been composed by the dreamtime ancestors and which are simultaneously history, law and social ritual; and songs that were composed within living memory and describe some important event or some aspect of daily life. Songs of the first type all have ritual significance – they include chants sung at increase ceremonies to stimulate the growth of animal and plant food species, charms against injury and sickness or to hurt enemies, charms to control the weather, magic chants to reaffirm religious ties to the land, and love charms to attract sexual partners. The major categories of traditional songs undoubtedly concern ceremonial cycles at male initiation; the extensive song cycles connected with important dreamtime legends such as the Djaŋ'kawu and Wawilak stories mentioned in the last section are of this type.

It is important to emphasise that Australian songs and song cycles do not have narrative structure; there is nothing similar to the European folk ballad. Each song will essentially throw up a single image, describing some significant place or object or activity. For instance, one of the shorter Djaŋ'kawu songs is translated by Berndt as:

(3) SONG 7

Splashing, a fish swishes its tail as it rises, close to the whale's 'whiskers'.
A splashing catfish, turning over on to its belly . . .
From Bralgu, from the mouth of the whale . . .

It splashes, its spike protrudes as it swims before the gaping
mouth of the whale,
Splashing and chasing it. 'I (says the whale) am splashing. I
chase this fish, under the water.'
Touching the fish with its 'whiskers'. The catfish splashes . . .
Splashes before the open mouth of the whale,
Spraying, dragging its spike through the sea . . .
And the noise of the sea, being churned up . . .!
Waves rising and splashing, caused by fish . . .
Noise of the water and foam from that fish . . .
Waves spreading out, spraying and splashing, caused by the
fish . . .

In association with its accompanying legend a cycle of songs will be INTERPRETED as a narrative although the songs themselves each describe individual scenes with no overt linkage between them. A particular song may occur at several places in the narrative, if the same dreamtime being or place recurs; one tribe may use the same songs as its neighbour but perhaps arranged in a slightly different order. Similar comments apply to the order of elements in songs of this type; each song will involve a number of set phrases but at different performances these may be strung together in different ways, while essentially invoking the same image.

The other category of songs – which are acknowledged to have been made up by living or recently deceased people – include provocations to fight, gestures of revenge, and attempts to shame social improprieties (for instance, drawing attention to a widow who tries to attract the attention of men before her period of mourning is over). But most songs of this type describe some fairly everyday incident and have an associated miming dance routine; they may mimic the behaviour of a bird or animal, or some aspect of everyday routine (e.g. women digging yams). The antics of white people have proved a rich source of amusement and it is common to find songs and dances dealing with the way in which white women wash clothes, the stance and walk of a stout European settler, and the like. Corroboree songs of this sort can celebrate some memorable incident within living memory; the appearance of European artefacts is frequently commemorated in this way – the first aeroplane seen, for instance. In 1937 Norman Tindale recorded a Tanganekald song that celebrated the building of the first bridge across the Murray River in 1876 and the laying of a railway over it in 1886:

(4) SONG OF MURRAY BRIDGE

Berntein	*ˈgeitjað*	*ˈmunakˈ:alni*	*ˈnunakunað*
‘it’s coming’	bridge	high-up-one	equally-high

ˈjer	*Tarewele ˈma:ŋk*	*ta: rˈilen*	*weˈreindaŋ*	*Lenteilin*
	place	wonderfully	made like	place

ta:ˈrilen	*ˈminindjun*	*ˈditju:ndu*
wonderfully	strong	solid

‘[The train] is coming to the great high bridge; as high as Tarawalamank (the cliffs opposite Murray Bridge township); wonderfully made like Lanteilin (Long Island); strong and solid like Lanteilin.’

The dance accompanying this song contrasted the native crossing of the river with the white man’s bridge.

There is great variation in the relationship between song language and current everyday speech. Some song styles in any given community – including those that celebrate recent events – will use everyday vocabulary, often put together in a rather simplified grammar. Songs in other styles may involve some obscure words, that do not occur in the everyday language and whose origin and meaning is unknown. Finally, there seem to be always a number of songs which are entirely foreign, containing not a single word recognisable as belonging to normal speech; they are learnt by heart, and assigned a general meaning. Songs of this type can often have an important social role in the community.

It is well known that technological innovations, circumcision and subincision rites, cultural traits and in fact any sort of behavioural characteristic would readily diffuse over a wide area in Australia. New customs or skills would be passed on at intertribal meetings and the like; diffusion typically followed established trade routes. W. E. Roth describes how the Molonga ceremony was first performed at Carandotta on the Georgina River in 1893, having been brought from the north-west. From there it diffused in three directions – west, east and south; by 1896 it had been performed in several localities up to 200 miles distant from Carandotta. This ceremony was then reported at Alice Springs in 1901, at Kilalpaninna (500 miles south of Carandotta) also in 1901, and was finally recorded by Daisy Bates in 1918 at Streaky Bay on the Nullabor Plain, almost 800 miles from the place where Roth had witnessed it twenty-five years before. Diffusion of songs and ceremonies on this scale must have been not infrequent in pre-contact Australia and is undoubtedly the cause of songs having considerable popularity in a community even though no one can understand any of their words (this is something like the vogue for the Beatles' songs, sung in English, in France and other countries during recent years).

Sometimes there may be more than just a handful of songs whose words and meanings are unknown. Ian Keen has recorded more than a hundred songs of this type in the Mandayala and related cycles of the Yolŋu speaking tribes in Eastern Arnhem Land. A typical example is:

(5) *warragagäbaga*
warrabigindjura

with each line being repeated a number of times. This song is said to have been sung 'to stop the carpet-python making rain'. A few of the words in these songs are proper names but no meanings are known for the remainder of the forms. Since there are no elements that can be seen to recur with the same significance we cannot properly talk of the songs as constituting a 'language' – they are no more than sequences of nonsense syllables (put together according to the regular rules of Yolŋu phonology), with a number of proper names interspersed. Each doublet constitutes a formula that has, by convention, significance within the mythic cycle. It is possible that some at least of the songs may originally have been borrowed from tribes to the south-east, but their words are not now recognisable as belonging to any known Australian language. Members of the Yolŋu community hear the songs regularly from childhood and have no difficulty in learning and remembering the complete cycle.

The example we have just quoted is unusual. What is more common is to find a number of songs that mix verses or words from several contiguous languages – there are Aranda songs with Luritja words, and Luritja songs close to the Aranda tribal border contain many Aranda words; this contrasts with the normal speech situation where people would never mingle together these two, totally different, languages. Many speakers of both communities are bilingual and could readily understand the foreign elements; the performance of such multi-language songs at intertribal gatherings enhanced feelings of mutual solidarity and rapport.

Every community has songs that contain some words which do not feature in everyday speech and do not belong to a neighbouring language. Opinions differ as to the origin of such items – some speakers will suggest that they come from a far-off language, some that they are archaic words from the local language, while others will maintain that they are nonsense words. Any of these possibilities may be true, in different instances; but as far as the social function of the song in the life of the community is concerned it does not matter which is the correct hypothesis.

It seems that words can sometimes drop out of use in everyday speech but be naturally retained in songs (this is a different matter from word taboo – if a tabooed form occurs in a song then as a rule the complete song, and maybe other songs that are associated with it, will be proscribed for a number of years). Archaic song words of this type are generally highly specialised items, with very specific meanings; they would always have been relatively infrequent words. A Yolŋu example (from Ian Keen) that may fall into this category concerns the onomatopoeic song verb *djikiḏiŋ+dhun-* to describe a sulphur-crested cockatoo calling out; this could only be paraphrased in everyday speech by the general verb *ŋäthi-* 'to call'.

There is evidence that songs in some languages include words that are archaic in another sense – they continue forms from an earlier stage of the language, that have been by-passed by later sound changes which affected all words in the spoken language. Barry Alpher has suggested that the Yir-Yoront song word *kukuruw* 'north' dates from a time when the proto-form **kuŋkar* had lost its nasal but had not yet undergone the specifically Yir-Yoront innovation in which the glottal stop *ʔ* replaced *k*; the corresponding item in present-day speech is *kuʔər* 'north'. It is, however, possible that this word might have been borrowed from the neighbouring Yir-Thangedl, which also lost nasals but did not undergo the change *k*>*ʔ*. Alpher presents further evidence that song words in Yir-Yoront involve just a three-vowel system, as did an ancestor language, whereas modern speech has developed a five-vowel system.

There are of course many songs that do just use words from the everyday spoken language. Even here, though, when a form is used in songs it can have a special esoteric significance that is known to, say, initiated men but might not be apparent to women and children. In Yolŋu speech *muḻuḻu* refers to 'sandalwood', but in a Ngärra song it refers specifically to the canoe used by the Djaŋ'kawu.

Songs that involve just everyday vocabulary tend to have quite simple grammar. There is minimal use of affixes – often in marked contrast to the everyday speech style – with, for instance, case endings sometimes being omitted from nouns. In many languages songs involve just simple sentences, eschewing complexities such as relative clauses; other languages do include more complex constructions in songs. In order to fit the metre of a song, the ending of a word may be clipped off, or else a vowel may be lengthened and diphthongised (which might never happen in ordinary speech); in a few regions nonsense syllables can be added to a phrase to fill out the line. Generally, the relation between the language of songs and that of prose narrative is similar to the grammatical and lexical differences between poetry and prose in English and other European languages.

We can illustrate by quoting a Girramay song, sung by Paddy Biran, which I recorded at Murray Upper in 1963. The Queensland government had just given to King Ranch, an American pastoral company, the lease on a large tract of traditional Girramaygan territory, and they were clearing the country with bulldozers and dynamite, destroying many traditional sites and causing great concern to the survivors of the tribe. The song describes this desecration, recounting how a mist was seen hanging over the country because of what had been done to it; it belongs to the Jaŋala style – used for songs of strong emotional message, typically love songs – and is accompanied by a light piece of cane, *baygal*, being tapped on a long, rounded and polished *gugulu* stick, that is made from the wood of the *jidu* tree. The song involved six phrases:

(6) [a] *bungi+ŋu gumburru*
lie down+REL mist+ABS
[b] *wudu guymayŋinbi*
nose+ABS place+ABS
[c] *banbu marrga+mbi+ŋu*
THAT loud noise+BECOME+REL
[d] *balŋa+balŋa+bi+ŋu*
cleared+REDUP+BECOME+REL
[e] *ŋaygu+rru bulu+nya*
MY+TOO father's father+ACC
[f] *baya+li+rru ŋaja*
sing+PURP+TOO I+NOM

It can roughly be translated: 'Mist is lying on Guymayŋinbi as the bulldozer's nose destroys the place, as it becomes cleared by the explosion of dynamite. That was my paternal grandfather's country. I had to make a song about its destruction.' Each phrase was repeated several times by Paddy Biran; using '/' for the end of a minor breath group and '/ /' for the end of a major breath group, the sequence was:

abcd / abc / / efad / bca / / acd / fecbac / /

After this another singer, Jack Murray, took up the song and repeated the same phrases in different sequences.

It will be seen that each phrase comprises six syllables, made up of one or two words:

[a] this is a simple intransitive sentence with subject *gumburru* 'mist' and verb *bungi-* 'to lie down, to be lying down'; the verb has the inflection *-ŋu* which normally marks a relative clause. Literally 'the mist which is lying'.

[b] the two words apposed here – *wudu* 'nose' (here 'nose of bulldozer') and the place name *guymayŋinbi* – would not constitute a grammatical sentence in normal speech.

[c] again a minimal intransitive sentence with subject *banbu* and a verb – in relative inflection – derived by the inchoative suffix *-mbi* from noun *marrga* 'loud noise (e.g. of gunfire or explosive)'; literally 'that which exploded'.

[d] simply a verb in reduplicated form, derived from the adjective *balŋa* 'cleared'; the subject is not stated but is presumably *guymayŋinbi* – '[the place] which had been completely cleared'.

[e] *ŋaygu bulu* 'my father's father' is a normal noun phrase; the accusative suffix *-nya* shows that it is object of a transitive verb. The phrase is lengthened to six syllables by the addition to *ŋaygu* of *-rru*, a ubiquitous suffix that can be added to any word in spoken Girramay with a sense something like 'too'.

[f] *ŋaja* 'I' marks transitive subject and the verb *baya-* 'to sing' here bears purposive suffix *-li*; literally 'I had to sing [something].' The sixth syllable is again made up by the universal clitic *-rru*, here added to the verb. [e] and [f] together make up a complete sentence, the former supplying the object and the latter the verb and subject; note that [e] and [f] only occur next to each other, in either order, in the song. Together the two phrases appear to mean 'I had to sing about my paternal grandfather's [country].'

3.3 Avoidance styles

In every Australian community there are certain kin relations that demand special behaviour; typically, two people in mother-in-law/son-in-law relationship should avoid close contact and sometimes may not address one another directly. Most (perhaps all) Australian tribes have or had a special 'avoidance' speech style which must be used in the presence of a taboo relative; bilingual informants frequently describe this as 'mother-in-law language'. Although there are one or two exceptions, the avoidance style usually has the same phonology and grammar as everyday speech; it differs in having a number of different lexical forms (nouns, verbs, adjectives). Languages differ in the extent of the avoidance vocabulary – the number of special words in the 'mother-in-law language' can vary from a score or so up to several hundred.

The details of kin that have to be avoided vary somewhat from tribe to tribe across Australia but always include, for a man, his classificatory mothers-in-law. Generally, but not invariably, a similar avoidance holds between a woman and her classificatory fathers-in-law, and – less strictly – between any person and a parent-in-law of the same sex. In Warlpiri from Central Australia, and in tribes from north-east Victoria the avoidance extends to wife's mother's brother; amongst the Dyirbal-speaking tribes it includes cross-cousins (especially those of the opposite sex), whereas further north in the Cape York Peninsula one can have daily association with one's spouse's siblings but must use the avoidance vocabulary in talking to them. In some areas avoidance speech is used reciprocally – a woman has to use the special vocabulary in the presence of her son-in-law, and so on – but in other regions the more senior member of the avoidance relationship could respond in everyday speech.

A primary social role of avoidance behaviour appears to have been to prevent sexual relations between certain kin. Dyirbal people shunned marriage with first cousins; cross-cousins (see 2.1) belonged to the section from which Ego should choose his spouse and the obligatory use of avoidance vocabulary with them emphasised their sexual unavailability. Generally, son-in-law and mother-in-law would not look one another in the eye or stand face to face; they would not in fact talk to each other directly but would instead address remarks through a third person (or, if there were no one else present, they might pretend to be talking to a dog, or even a stone). Where direct communication, using avoidance style, is permitted – say, between a man and his father-in-law – they talk in slow, soft voices, almost approaching a whisper. The most extreme case of avoidance is that reported by Donald Thomson for the Umpila tribe. There, two people in the relation of *yami* (wife's mother↔daughter's husband) had to avoid each other totally and one could never speak in the presence of the other. The Ngornki avoidance vocabulary in

Umpila was used in the presence of relatives between whom the prohibition was slightly less strong e.g. man and wife's father or wife's brother.

There is generally a continuum of types of avoidance behaviour, depending on the relationship of the participants (and sometimes, even, on their relationship to a person that is being talked about) in terms of the classificatory kinship system. At one extreme of the scale the special avoidance style should be used; other points on the continuum demand other linguistic conventions (e.g. the use of a plural pronoun for a singular referent – see 11.1.5). If someone mistakenly used the wrong style they would be covered with shame and would be likely quickly to withdraw. Anyone who persistently or deliberately flaunted avoidance conventions might well be speared.

Avoidance relations normally depend on the structure of the kinship system, rather than on the details of individual marriages. Thus, in many parts of the continent, any mother's mother's brother's daughter would be a classificatory mother-in-law (cf. 2.1), a person in whose presence a boy should use the avoidance style of speech. Although no direct observations have been made, it seems that avoidance language was learnt in the same way as everyday speech, maybe a year or two behind it. A child would hear the avoidance style spoken around him, and would gradually become aware of the circumstances in which he himself should employ it.

Kenneth Hale has reported that the avoidance style for Wik-Meʔnh, from the Cape York Peninsula, has /r/, which is lacking in everyday speech (an earlier form of the language did have /r/ but it has uniformly changed into the glottal stop /ʔ/ in the everyday style). With this one known exception, avoidance style words have exactly the same phonology as everyday speech.

In at least some dialects of the Western Desert language, free-form pronouns have different avoidance forms. The singular pronouns are, in Luritja:

	everyday style	avoidance style
'I'	*ngayu(lu)*	*nganku(lu)*
'you'	*nyuntu(lu)*	*ngulyu*
'he/she'	*paluru*	*pangkuru*

There are also distinct forms for dual and plural pronouns. But all grammatical suffixes and the like are identical between the two styles.

Most avoidance styles have exactly the same grammar as everyday speech – the same pronouns, interrogatives, particles and the like – and differ only in some open-class lexical words – nouns, verbs and adjectives.

It will be seen that 'mother-in-law language', although a convenient label, is really a misnomer. It is not a separate language, but just a separate linguistic style, employing the same phonology and grammar as the everyday style but with some lexical differences. The most extreme example is undoubtedly that of Dyirbal-speaking tribes: here every single lexical word, except a few kin terms, has a different form in the Jalŋuy (avoidance) and Guwal (everyday) styles. 'Blue-tongue lizard' is *baŋgarra* in Guwal but *jijan* in Jalŋuy, while 'ring-tail possum' is *midin* and *jiburray* respectively.

There are not, however, as many lexical forms in Jalŋuy as there are in Guwal. Typically there is a one-to-many relationship with a single Jalŋuy word corresponding to a number of specific Guwal items. *Jijan* is in fact the Jalŋuy term for any lizard or guana, while *jiburray* covers all possums, squirrels and gliders. That is:

Guwal	Jalŋuy	Guwal	Jalŋuy
baŋgarra 'blue-tongue lizard'	*jijan*	*midin* 'ring-tail possum'	*jiburray*
biyu 'frilled lizard'		*jula* 'striped blue possum'	
buynyjul 'red-bellied lizard'		*mungany* 'Herbert River ringtail possum'	
gaguju 'water skink'		*yiwarrmany* 'stinking honeysucker possum'	
bajirri 'water goanna'		*burril* 'flying squirrel'	
. . .		. . .	

Whereas Guwal has only specific terms in these areas, Jalŋuy operates entirely with generic nouns; if it is necessary to be more specific in Jalŋuy then a relative clause or something similar would have to be added, describing the typical habitat, behaviour or colouration of the species concerned.

Correspondence between Jalŋuy and Guwal vocabularies can be semantically revealing. In the area of nouns they indicate the taxonomic classifications of flora and fauna that speakers of Dyirbal recognise. Verb correspondences demonstrate aspects of underlying semantic organisation that could otherwise scarcely have been uncovered by a linguist who was not a native speaker of the language. For instance, Jalŋuy *gunduma-l* was given as a correspondent of Guwal *julma-l* 'to squeeze, knead' and also of Guwal *bugama-l* 'chase, run down'; the Guwal verbs are more detailed specifications of 'bring [two things] together', Jalŋuy having just one verb for this general concept. There is a single overall semantic system for the Dyirbal language, but it is mapped onto vocabulary items at two different levels of generality; comparing Jalŋuy–Guwal word correspondences enables us to project back, as it were, and uncover the basic semantic system of the language. We return to this topic in 5.2.4.

Dyirbal Jalŋuy has roughly the minimum number of words compatible with it being possible to say in Jalŋuy everything that can be said in Guwal. To this end, Jalŋuy makes maximal use of certain grammatical devices – it employs processes of nominalisation, verbalisation and compounding more than does Guwal. Like almost every other avoidance style (excepting only some dialects of Western Desert, in free-form pronouns) Jalŋuy has exactly the same grammatical words and affixes as Guwal – they share *gulu* 'not', *ŋaja* 'I', *balay* 'there' and the like. It is interesting to note that interrogatives which correspond to grammatical classes – *wanya* 'who', *wunyjay* 'where' – are common to the two styles, whereas interrogatives corresponding to open, lexical classes differ. Thus 'what' is *minya* in Guwal but *mindirr* in Jalŋuy, and the interrogative verb 'do what/do how' has the forms *wiyama-* and *wiyaba-*.

A sample of Jalŋuy dialogue, with its translation into Guwal, will help illustrate these points:

(7) GEORGE WATSON: *ŋali* *girrinyjany+garra*
we-2+NOM name+ONE-OF-PAIR+ABS
ganba *wuyuba+rri+nyu*
earlier-today tell+REFL+PRES/PAST
'Girrinyjany (Jimmie Murray) and I were talking earlier on today.'
CHLOE GRANT: *mindirr+gu+ma*
what+PURP+INTERROG
'What about?'
GEORGE WATSON: *balbiji+gu bayi*
eel+PURP he+ABS

nyirrinda+rri+nyumi, wuyuba+rri+nyu
spear+REFL+PERF-REL tell+REFL+PRES/PAST
'He was saying that he'd been spearing eels.'

The pronoun *ŋali* 'we two', and *bayi* 'he' are the same as in Guwal, as are the suffixes *-garra* 'one of a pair', *-gu* 'purposive', *-ma* 'interrogative', *-nyu* 'present-past tense' and *-nyumi*, marking the verb of a perfective relative clause. Proper names such as Girrinyjany occur in identical form in the two styles. The correspondence between Jalŋuy *mindirr* and Guwal *minya* 'what' was noted above. Other differences concern lexical items. Jalŋuy *balbiji* 'eel' corresponds to Guwal *jaban* 'big spotted eel', *girriŋan* 'black eel' etc. The time qualifier *ganba* in Jalŋuy corresponds to both *gala* 'earlier on today' and *gilu* 'later on today' in Guwal; the present-past inflection of the verb here indicates that the sense of *gala* is intended. Finally the verbs: whereas Guwal has transitive *buwa-y* 'tell' and intransitive *wurrba-y* 'talk', Jalŋuy has a single root – transitive *wuyuba-l* 'tell' – covering this semantic area. The reflexive form *wuyuba+rri-y* is employed in intransitive sentences. Guwal has a variety of verbs for different types of spearing, whereas Jalŋuy has just one generic term *nyirrinda-l*; the most appropriate Guwal verb to describe spearing of eels is *waga-y* 'spear', with the actor holding onto the spear, when he cannot see what he is aiming at and makes fairly wild jabs, e.g. 'spearing for eels among submerged tree roots'.

The Guwal equivalent of (7) could thus be:

(7′) *ŋali girrinyjany+garra gala wurrba+nyu*
minya+gu+ma
jaban+gu bayi wagay+marri+nyumi, wurrba+nyu

These examples illustrate one point that applies to avoidance styles all over Australia. Corresponding avoidance and everyday forms are generally quite different – that is, they are presumably not cognate. The special avoidance forms are on average longer than the corresponding everyday words, and often show archaic characteristics (e.g. the inclusion within the modern root of what might previously have been a productive affix – the final syllable *-ba-* of Dyirbal Jalŋuy *wuyuba-* 'tell' may possibly be related to a transitivising process in an earlier stage of the language).

Dyirbal is unusual in that every tribe speaking a dialect of this language has no lexical item common to its Guwal and Jalŋuy styles (with the exception, already noted, of a small set of kin terms). But there are examples of a certain word which is in the Jalŋuy style of one tribe being an everyday speech form for a neighbouring tribe. Thus *jijan* is Mamu Jalŋuy for 'any lizard or goanna' but occurs as the specific noun 'water goanna' in Jirrbal Guwal (Mamu has *bajirri* for 'water goanna' in its everyday style); here the Jalŋuy–Guwal identity applies between two dialects (languages$_1$) of a single language$_2$. Another example concerns Mamu Jalŋuy *diŋal* 'egg, eye', corresponding to *bambu* 'egg' and *jili* 'eye' in the everyday style; *diŋal* is the word for 'egg' in the everyday style of Yidiny, a neighbouring but only distantly related language$_2$. (The geographical positions of these tribes are shown on map 4.) There is evidence that in this region Jalŋuy vocabulary grew to its present size quite recently, partly as a result of borrowing from neighbouring languages; before this there would perhaps have been just a few score specifically Jalŋuy words, as is found today in other areas. It is significant that whereas Yidiny and the neighbouring Ngajan dialect of Dyirbal have only 29 per cent of their everyday vocabularies in common, their Jalŋuy styles show about 50 per cent coincidence; we mentioned in 2.5 the close social contact between these two tribes.

The avoidance vocabulary reported by John Haviland for Guugu Yimidhirr (at the Endeavour River) shows similarities and also significant differences from Dyirbal Jalŋuy, 200 miles to the south. Most words from everyday speech cannot be used with avoidance kin and the special avoidance style vocabulary is, like Dyirbal, in a one-to-many correspondence with everyday vocabulary. Thus the single avoidance verb *bali-l* 'to travel' corresponds to half-a-dozen everyday verbs, with specific meanings such as 'go, walk', 'crawl', 'paddle', 'float, sail, drift' and 'limp along'. But there are also a number of everyday forms that CAN be used in conversation with a brother-in-law or father-in-law if they are pronounced in the proper slow, respectful way; these items include the less common words from every part of speech. Finally, there are some everyday terms which have NO correspondent in the avoidance style; it is not permissible to talk about such things as 'clitoris', 'erection', 'pubic hair' or 'sweaty smell' within the sensitive relationship that holds between a man and his wife's kin.

There are just a few score lexical items particular to the avoidance style of most tribes. They will cover the commonest everyday words, and there is almost always a one-to-many correspondence, as in the richer styles of Dyirbal and Guugu Yimidhirr. A degree of vagueness typically characterises the avoidance style; this is in contrast with everyday speech, which usually strives for the greatest possible specificity. Generic terms 'vegetable food' and 'flesh food' will be used to refer to any edible plant or animal, often augmented by gesture. If it is necessary to be more specific, then an everyday word CAN felicitously be included in an avoidance-style sentence. Occasionally, there can be a productive marking device in these circumstances; in Wik-Meˀnh an infrequently occurring plant or animal name can be prefixed by *ji-* to produce an avoidance form.

Some languages from Central Australia have a fair range of synonyms for each of the commonest nouns; if one form is tabooed then another term, that was previously used quite infrequently, may be taken over, as the normal label. In Warlpiri, for instance, there are only a few score words that could be said strictly to belong to the Yikirrinji avoidance style. Beyond these, one of the available synonyms for a frequently occurring noun (see chapter 5) will be used in Yikirrinji; it is here difficult to draw a hard-and-fast line between the two styles.

Warlpiri is unusual in that, with a few exceptions, EVERY verb of the everyday vocabulary is replaced by just ONE verb in Yikirrinji. Furthermore, the verb form used depends on the kin of the avoidance relation involved. When talking in the presence of wife's brother the Yikirrinji verb is *marrarla-rni*, with wife's mother's brother it is *mitipi-nyi*, while with both wife's mother and father's father it is *ngarrijarri-mi*.

3.4 **Secret styles**

Avoidance styles, which occur in at least the great majority of Australian tribes, are known to everyone in the community and are used by every person, in the presence of appropriate kin. In contrast with this, a limited number of tribes also have (or had) a 'secret language', which is taught to boys at their initiation and can be used only by initiated men on ceremonial occasions.

Unlike avoidance styles, these mystic languages are taught explicitly, as part of the preparatory training for initiation. R. H. Mathews described how, in several tribes of New South Wales 'while the novitiates are away in the bush with the elders of the tribe, they are taught a mystic name for surrounding natural objects, animals, parts of the body, and short phrases of general utility. The language varies in different communities.' Also 'it is never used in the presence of women or children, but is spoken exclusively by men when carrying out the ceremonies of initiation'. Mathews gave just a few dozen words in the

Tyake or mystic language of the Kūrnū tribe, and also in the Yauan or mystic speech of the Gamilaraay. Some are totally different from everyday words while others appear to involve a nonce addition to the everyday form e.g.:

	Gamilaraay	Yauan
'foot'	*dhina*	"*gungu*"
'carpet-snake'	*yabaa*	"*millngulli*"
'eye'	*mil*	"*millungga*"
'nose'	*muru*	"*murrunggŭn*"
'teeth'	*yira*	"*yirrambunna*"

Mathews did not comment on the grammar of these mystic languages but from the few sentences given in his field notebooks it appears that they were similar to avoidance styles in not differing grammatically (in any significant way) from everyday speech. Almost certainly the 'mystic language' would have been a different speech style – characterised just by some vocabulary differences – rather than a distinct language. As with avoidance styles, words in the secret styles are on average considerably longer than corresponding forms in everyday speech.

Kenneth Hale has described an interesting speech style called Damin, which was used until recently among initiated men of the Lardil tribe, on Mornington Island. The striking feature of Damin is its phonology – besides the consonantal inventory of everyday Lardil (six stops, six nasals, a lateral, two rhotics and two semi-vowels), Damin also has four nasalised clicks – bilabial /m!/, dental /nh!/, apico-alveolar /n!/ and apico-domal /ṇ!/ – an ingressive lateral fricative /L/, a glottalised, or ejective, velar stop /k'/ and an ejective bilabial stop /p'/. No other language in Australia has sounds of this nature; Hale remarks that the nasalised clicks are like those found in Khoisan languages of southern Africa but that he knows of no language with sounds like those which he symbolises by /L/ and /p'/ (the latter is formed not with glottalic pressure, but by creating pressure between the tongue and the bilabial closure). Damin has a system of only three vowels, *a*, *i* and *u*, with contrastive length, whereas everyday Lardil distinguishes long and short varieties of four vowels, *a*, *i*, *u* and *e*.

The phonetician J. C. Catford has pointed out that Damin employs five phonetic initiation types – pulmonic egressive (which characterises ALL sounds in most other Australian languages), pulmonic ingressive (/L/), velaric ingressive (the clicks), velaric egressive (/p'/) and glottalic egressive (/k'/). No other language in the world has this variety of initiation types, leading Catford to 'perhaps hypothesize that [Damin's] sound system is a deliberately invented one'. (Interestingly, the Lardil attribute Damin to a legendary personality called Kalthad 'yellow trevally'.)

Damin has a small vocabulary, perhaps no more than 250 words in all. It works mostly in terms of generics – *m!i* refers to any member of the class of vegetable foods, *thuu* is used for large sea-dwelling mammals such as dugongs and turtles, *thii* for elasmobranch fish (stingrays and sharks), *Li* for bony fish, *n!un!u* for liquids, and so on. Detailed specification is possible in Damin by appropriate modification of the generic noun: *wiitjpur* is the Damin term for various woods and wooden objects but a precise correspondent of Lardil *muŋkumu* 'wooden axe' can be given by *m!iwu ṭiti-i-n wiitjpur*, literally 'sugar-bag (= honey) chopping stick', a reference to one of its major uses.

There is a Damin form for the negative pole of each major adjectival opposition, the positive term being derived by preposing *kuri-*, e.g. *tjitjuu* 'small', *kuritjitjuu* 'large'. While Lardil has nineteen pronouns and several demonstratives, Damin has a two-term opposition, *n!a* 'ego' and *n!u* 'other' (no other language in the world is known to lack a contrast between first, second and third person singular pronouns). All bound grammatical forms are, however, identical to everyday Lardil. The fact that the suffixes used with Damin words are from Lardil (rather than being related to Lardil) can be seen from the occurrence of the normal four vowels of Lardil in these suffixes, as against the three-vowel system of Damin roots. Damin plainly involves the same semantic and grammatical system as Lardil, although lexical representation is at a more generic level; despite the phonological differences it is essentially a further variety of the Lardil language, rather than being any sort of separate language.

In common with other 'secret languages' – and unlike avoidance styles – Damin was taught quite explicitly. The novice was simply brought forth and a Damin speaker began shouting the vocabulary at him while another repeated the terms in Lardil. The Damin speaker would begin with fishes and go right through domain by domain until the end, the novice being expected to master Damin in one or two sittings. Although it appears that the language was spoken only by initiated men, it was used openly in the community; women and uninitiated men had the opportunity of hearing and perhaps understanding it.

There are also a number of 'secret languages' which have the same phonology, grammar and lexicon as the everyday style but simply replace each word by its antonym. Secret languages of this type are – unlike the varieties we have just described – still in active use, and the initiated men of the tribes have requested that information on them should not be included in this book.

There have been no reports of secret languages that are confined to women's ceremonies in Australia. There seems to be a general tendency for the details of male rituals to be taught and explained simply and explicitly while women are usually expected to assimilate the structure of female rituals by exposure and experience. It may be this that is responsible for the lack of any women's mystic vocabulary; it is difficult to imagine such a special style – with restricted conditions of use – that was not passed on by explicit instruction.

A secret language of a quite different type has recently been reported, connected not with traditional social organisation, but functioning rather as a peer identification device. The speech style which developed about 1960 among teenage speakers of the Western Torres Straits language is similar in form to children's 'secret languages' found in many other parts of the world. It involves inserting after each syllable in a word an additional syllable beginning with *k* and repeating the vowel of the preceding syllable. Thus *yawo* 'goodbye' becomes, in this teenager secret language, *yakawoko*, and *ŋay* 'I' is *ŋakay*.

4

The role of language in Aboriginal Australian society today

4.1 Aboriginal English

From the time of the first fleet, European colonists have shown little interest in – or aptitude for – learning Australian languages. David Collins described the early scene at Sydney: 'language, indeed, is out of the question; for at the time of writing this, (September 1796), nothing but a barbarous mixture of English with the Port Jackson dialect is spoken by either party; and it must be added, that even in this the natives have the advantage, comprehending, with much greater aptness than we can pretend to, everything they hear us say'. Aboriginal Australians – naturally multilingual in their traditional society – found no difficulty in learning to understand and speak good English. Indeed, in recent years schoolteachers have remarked that full-blood or half-caste Aboriginal children show more aptitude for learning, say, high school French than do most white pupils; it is not suggested that there is any genetic factor at work here, but just an open, social interest in acquiring new languages.

As white settlers spread out through the continent they took with them the 'barbarous mixture of English with the Port Jackson dialect' and used this in talking with the new tribes they encountered. Thus a type of English-based pidgin evolved, used by Europeans under the mistaken idea that they were employing a variety of the local Australian tongue. In 1834 the Reverend Lancelot Threlkeld prefaced his grammar of the Lake Macquarie language with the warning 'it is necessary to notice certain Barbarisms which have crept into use, introduced by sailors, stockmen, and others who have paid no attention to the Aboriginal tongue, in the use of which both blacks and whites labour under the mistaken idea, that each one is conversing in the others language'. Of the two dozen words Threlkeld cited, at least two-thirds were based on words from the Sydney language, quite different from those used at Lake Macquarie – the barbarism for 'wife' was *jin* compared with Lake Macquarie *po-ri-kun-bai*; 'to bathe' was *boge* (from the Port Jackson root *buugi-*) as against Lake Macquarie *nu-róng-kil-li ko*; 'good' was *boojery* (from Port Jackson *bujarri*), against Lake Macquarie *mur-ro-rong*; 'no' was *bail* (Port Jackson *biyal*) compared with Lake Macquarie *ke-a-wai*; and 'to talk' was *piyaller* (Port Jackson *bayala-*) whereas the Lake Macquarie language had *wi-yel-li ko*. The other words Threlkeld quotes are a curious mixture, including *kangaroo*, *pickaninney* 'child' (ultimately of Spanish or Portuguese origin) and the English slang term *gammon* 'falsehood'.

There is little documentation of this early pidgin. A rare example occurs in an account of the final interview with an Aborigine about to be executed. According to the *Sydney Gazette* of 2 January 1828 he said:

(1) *Me like it pai-alla you gentlemen*
'I would like to speak to you, sir.'

and then

(2) *Bail Saturday tumble down white fellow, bail Jingulo tumble down white fellow, bail me tumble down white fellow – Tommy tumble down white fellow, sit down Palabbala, bulla jin, like it me, brother.*
'It wasn't Saturday who killed the white man, it wasn't Jingulo who killed the white man, and it wasn't me who killed the white man – Tommy, who lives at Palabbala, and has two gins (wives) and is as like me as my brother, killed the white man.'

Some words from this pidgin were eventually introduced into standard English – *gin* 'Aboriginal woman', *waddy* 'Aboriginal war-club' and so on. A few of Threlkeld's 'barbarisms' are today used just in rural Australian English dialects – for instance *bogey* 'bathe'. Only in the case of names for introduced animals and the like were pidgin forms incorporated into Australian languages. Thus *yarraman* is the name for 'horse' in many languages of Queensland and the Northern Territory; this may originally have been a descriptive term ('long teeth' has been suggested) from a language to the south of Sydney, and has spread as part of the patois that early colonists used in conversation with Aborigines. When a settler came into a new area he would describe his horse as '*yarraman*' to the local tribesmen, perhaps thinking he was using a word that they would know (something that belonged to 'the Australian language'); they would repeat it, thinking that it was a word from English. Other loan words that occur in many unrelated Australian languages over a wide area – *migulu* 'white man' is a further example – probably had a similar origin.

As we have already said, Aboriginal Australians were eager and able to learn normal English, if they were exposed to it. But they were often not addressed in the standard dialect. The pioneer missionary E. R. B. Gribble described a typical situation around 1900: 'in the early days of our work pidgin English was used by us all, and a beastly gibberish it was. As time passed, I determined that it should cease, and good English be used; and, strange to say, the people seemed to find it easier to avoid than did the staff, who had got so accustomed to its use that they found it extremely difficult to avoid addressing in pidgin English every black they met.' It was because they were spoken to in this way, that Aboriginal Australians initially adopted a poor type of pidgin English. As T. G. H. Strehlow put it, with typical directness: 'Northern Territory pidgin English is not English perverted and mangled by the natives; it is English perverted and mangled by ignorant whites, who have in turn taught this ridiculous gibberish to the natives and who then affect to be amused by the childish babbling of these "savages".'

We can illustrate with a newspaper report of how Aboriginal Australians were addressed at Atherton, North Queensland, in 1891. Two words originally from the Sydney language, *budgeree* 'good' and *baal* 'no', as well as *humpy* 'hut' from the Brisbane language, and the Melanesian pidgin word *ki-ki* (*kai-kai*) 'food' were used in a grammatically bizarre type of English. The government had undertaken that every year, on the Queen's birthday, it would give each Aboriginal Australian a blanket. 'When the distribution was finished Mr. Zillman had them grouped on the hillside and addressed them something as follows: "Budgeree blackfellow, baal him go steal corn, potatoes; baal him go along humpy steal anything any more. Him budgeree good blackfellow; suppose him no steal, big master Government give him ki-ki every week – give him meat, and no let anybody touch budgeree blackfellow. Suppose him blackfellow no budgeree, big fellow Government angry lock him up. White fellow send him blackfellow blanket and tobacco (!), and suppose come along another time get him blanket again", and so on. A few of the best informed blacks thoroughly understood Mr. Zillman's remarks and interpreted them to the others. The entire assemblage promised to go and sin no more ...' (The exclamation mark was presumably added since no tobacco – or food – had been given out; there were not even enough blankets to go around, some Aborigines getting only a half or a quarter of a blanket.)

There has been a tendency for the pidginised variety of English originally spoken by Aborigines to move closer and closer to the standard language (this has been assisted in recent years by exposure to the standard through the availability of schooling, and of transistor radios). Today, Aborigines in almost every part of Australia understand standard English and speak a recognisable dialect of English (mutually intelligible with other dialects), as their first or second language.

Distinctive Creoles have, however, emerged in a number of areas. Cape York Creole is spoken in the far northern peninsula region of Queensland (but is not found south of Cairns); and Roper Kriol, which originated at Roper River Mission, has now spread over a large section of the Northern Territory and adjacent regions of Queensland and Western Australia. These are forms of speech which, although based on English, are not automatically intelligible to speakers of English, or vice versa.

The Creoles have phonological systems typical of Australian languages (see chapter 6). In Cape York Creole, there is no distinction between voiced and voiceless sounds (*b*/*p*, *d*/*t*, *g*/*k*) or between some stops and fricatives (*b*/*v*, *p*/*f* etc.); the *r*-sound is generally trilled. In Roper Kriol there are five contrastive places of articulation for stops (not counting the glottal stop) and a voicing contrast has developed, with minimal pairs such as *poo* 'to pour', *boo* 'water-well, bore'; *ti* 'tea', *di* 'to delouse'. The twenty or so vowels of English (see 6.3) are mapped onto about ten or twelve vowels (including some long/short pairs). Many grammatical systems of English recur in the Creoles, sometimes shown in different ways. Compare the ways of marking definiteness and number:

ENGLISH	singular	plural	CAPE YORK CREOLE	singular	plural
definite	*the*	*the*	definite	*det*	*dem*
indefinite	*a*	(*some*)	indefinite	*wan*	*plenti*

Unlike English, Creoles do not have an obligatory plural-making suffix on nouns.

The Creoles also include grammatical complexities typical of Australian languages, which are not found in English. For instance, they distinguish dual as well as singular and plural forms of pronouns, and also an inclusive/exclusive distinction for first person dual and plural (see 9.3). The subject pronouns for Roper Kriol, as given by David Zorc, are shown in table 4.1. Other grammatical devices that may be taken over from Australian languages include reduplication as a process for deriving an adjective from a noun or verb e.g. Cape York *neil* 'nail', *neil+neil* 'spiky'; *jam* 'jump', *jam+jam* 'jumpy'.

Table 4.1 *Subject pronouns in Roper Kriol*

	first person inclusive	first person exclusive	second person	third person
singular		*mi* 'I'	*yu* 'you'	*im* 'he, she, it'
dual	*yunmi* 'you and I'	*minim* ~ *mindubala* 'me and him/her/it'	*yundubala* 'you two'	*dubala* 'them two'
plural	*melabat* ~ *wi* 'you and I and other(s)'	*mibala* 'me and others (not you)'	*yubala* ~ *yumob* 'you all'	*olabat* 'them all'

These Australian Creoles are believed to have derived in part from Beach-La-Mar, a Melanesian pidgin that was spoken by Kanaka labourers brought from the South Sea Islands to work on Queensland sugar plantations in the late nineteenth century. Indeed, their vocabularies contain a few neo-Melanesian words such as *kaikai* 'food, eat', *savi* 'know', as well as *migolo* 'white man' – from the older Australian pidgin – and the inevitable *pikanini*.

Most of the vocabulary is, though, of English origin (although in Roper Kriol at least there are some 'doublets' with an Australian word available alongside an English one e.g. *faya* or *ngura* 'fire', *woda*, *wada* or *ngugu* 'water'). However, the semantic structure of some parts of the lexicon reflects typical Australian semantics; among kinship terms, for instance, *mami* covers 'mother' and also 'mother's sister(s)' while *anti* refers just to 'father's sister(s)', and so on.

These Creoles are distinct languages. Their grammars are in some ways more rational than that of English – the Creoles have eliminated needless irregularities – but they are just as rich; Roper Kriol, for instance, has an extensive system of verb auxiliaries and of verbal suffixes. They show an ingenious blend of English and Australian structural features, producing a language that seems quite appropriate to the bicultural milieu in which many Aboriginal Australians find themselves. Indeed, in some areas an increasing number of young Aborigines are speaking Kriol – instead of or as well as an Australian language – and it is coming to be thought of by them as 'the Aboriginal language'.

A full discussion of Australian Creoles is beyond our scope here. The remainder of this section will focus on the varieties of English spoken by Aboriginal Australians in those parts of the continent where Creoles have not developed.

In most Aboriginal communities today there is a dialect continuum, ranging from standard English, at one extreme, to what we can call 'Aboriginal English' at the other. Each speaker will cover a range of the continuum, the dialect he employs in any speech act depending on the social circumstances of that speech act. Older people, who also speak an Australian language, may use Aboriginal English, modifying this slightly towards the standard when conversing with a white man; younger people may speak standard English to Europeans, a modified dialect with their peer group, and a more extreme variety with their elders. There is, of course, variation from community to community, and from family to family within a single community.

The most extreme form of Aboriginal English includes a number of lexical items from Australian languages and basically an extended Australian phonology, similar to those of the Creoles. But it is a dialect of English, mutually intelligible with other dialects. Compare a typical sample from the Perth area:

(3) *Nyungas still funny here. All on the nalung you know and still acting the goat.*
'Aboriginal people are still behaving badly here. They are all drinking wine and still acting foolishly.'

with one from an Aborigine from Cairns translating a legend into English:

(4) *"You give us big ones, uncle!" "That's all I can chuck, eat him head!"*
'[Two boys ask their uncle, who is up a tree, cutting grubs out of the wood:] "Please give us some meaty grubs, uncle."

> "These are all the grubs I can throw down to you. Eat their heads!" [the uncle replies]'

The differences between Aboriginal English and the standard dialect are not arbitrary, and are seldom due to any lack of ability to master the standard variety. In many cases they continue – in subtle but important ways – critical grammatical distinctions from Australian languages. Consider *eat him head* from (4). Singular number is used, where the standard dialect would require plurality – *eat their heads*; number specification is optional in most Australian languages and is essentially redundant here – plural reference is obvious from the context, and was marked by the use of *ones* in the previous utterance. But what of the use of *him head*, where the possessive construction *his head* would be expected. In fact, the speaker of this sentence did know the possessive pronouns and would always use them in saying *his boomerang*, *his wife*, and so on. In employing *him head* in (4) he was following a grammatical distinction of his Australian language – a difference is recognised between part–whole relationships as in 'head of' (often called inalienable possession) which is shown merely by apposing words referring to whole (*him*) and part (*head*), and alienable possession, something that doesn't necessarily belong to something else, which is marked by a genitive affix similar in function to *'s* in English. (The distinction between alienable and inalienable possession in Australian languages is exemplified at the beginning of chapter 10.)

There is need for intensive study of Aboriginal English, by linguists familiar with the structure of native Australian languages; none has yet been undertaken. At present teachers criticise 'mistakes' in the speech of Aboriginal children without realising that they are speaking a dialect with a slightly different grammar – not with 'bad grammar' or 'no grammar' – a grammar which may in fact make rather more distinctions of particular sorts than does the standard dialect. In a similar way, the phonology of Aboriginal English can reflect phonological patterns and constraints of Australian languages. For instance, words may not end in stop consonants (*b*, *d*, *g*, *p*, *t*, *k* etc.) in most Australian languages, and English words will often have their final sound dropped, to conform to this pattern. This must certainly be a contributory factor to the occasional use of *been* to indicate past tense – rather than the past tense suffix *-ed*, with its final stop – *I been clean it*, rather than *I cleaned it*. Another factor here is the tendency to eliminate irregularities – the regularly formed *I been come* saves having to learn and employ an irregular past tense form, as in *I came*. Indeed the avoidance of final stop consonants in Aboriginal English can lead to interesting reinterpretations: the game of *Hide and Seek* is called by Aboriginal children at one settlement (none of them knowing any Australian language themselves) *Hiding see*, sometimes expanded to *Hiding go see*; the new title seems just as appropriate as the traditional one!

Although it can combine most of the grammatical distinctions of standard English with some of those from Australian languages, most varieties of Aboriginal English probably have rather simpler grammars overall than either of the source languages. And many speakers do have a rather limited vocabulary: Aborigines who have English as their only language – especially 'partially assimilated' people brought up on missions or government settlements – will use many fewer lexical items than most of their white contemporaries, although of course they will still employ several thousand words. We return to this topic, and the reasons for it, in the next section.

W. H. Douglas has provided a classic account of language use amongst Aborigines in the south-west. He recognises three major speech forms. A handful of older people employ what must be a simplified version of the original Australian language of that area, which they call Nyungar or 'the Lingo'. For many people the most extreme dialect is an Aboriginal English with a scattering of Nyungar words (this dialect is also referred to as Nyungar) – an example was given at (3); there is a continuum joining this to standard Australian English, which is referred to as Wetjala (probably based on 'white fellow'). Douglas explains that which point on the dialect continuum any speaker chooses to employ depends on the social situation – only Wetjala would be used in a shop or church while the Lingo is a mark of group identification. One lady informant was explaining a point to Douglas in Wetjala when she turned to another woman to request additional information and absent-mindedly forgot to switch styles: 'suddenly, in the middle of her request, she broke off, covered her face with her hands and interjected, "Oh sorry, Mrs Williams, I talked to you in Wetjala!"'.

People whose first language is an Australian tongue will almost always know a little English, for dealings with white people. Their construction of English sentences will often reflect the grammar of their native language; and, in addition, they may assign to an English word a range of meaning that goes with a native word, which only corresponds in part to the meaning of the English form as it is used in the standard dialect. Paul Black has supplied an interesting example from the Normanton area of Queensland, where the range of meaning of the Kurtjar expression *nɨyak.řar* 'yes indeed; certainly; I'd love to do it; of course' has been extended to the English phrase *love to*. In the Aboriginal English of this area *love to* has the meaning 'I sure did', as in '*Did you fall off your horse?*', '*Love to*'.

This transfer of lexical range is an important matter, and one to which little attention has been paid. It can have disastrous consequences for an Aboriginal Australian who is, say, summoned to appear in a European-type court. The judge observes that he speaks some English and denies him the help of an interpreter. He does indeed use English words, but not always with the standard meanings. To quote one relevant instance, Francesca Merlan has noted that, around Katherine, Aboriginal Australians use *to tell a lie* (or *tellim liar*) to mean 'to knowingly utter a falsehood', as in English, but also extend its range to cover 'deceive', 'break a promise to do something' and the like. It needs little imagination to speculate on the lack of communication that would be likely in a courtroom if the white judge and barristers were ignorant of this and related semantic differences between Aboriginal English and standard English. For an Aboriginal Australian to be tried according to a foreign legal system is bad enough, when he has his own moral code and prescribed punishments, in terms of which he has been brought up and lives. When in addition the court lacks awareness of critical semantic differences between dialects, what chance is there of justice being done?

4.2 The role of language in community cohesion

The cultural and political system of a small tribe can endure for millennia under stable conditions; but it may be drastically disrupted by any one of a number of external forces. A tribe can totally disintegrate in just a few generations if sudden, major alterations are made to its economy and general pattern of living, or to its social system and authority structure, or to its traditional religion, or to its territorial domains, or to the language which codifies, explains and relates together all these elements.

Missionaries in Australia were generally sincere men, devout in their own belief and determined to share it with others. But they were often unaware of the nature of the societies into which they intruded and of the traditional social and moral norms – different from their own, but surely having equal validity and deserving of respect and understanding. Their attempts at conversion led to more efficient disintegration of ancient societies in Australia than perhaps in any other part of the world.

Aboriginal Australians naturally accepted the food that missionaries offered, in preference to painstaking hours of tracking, hunting and gathering, and the subsequent complex and lengthy preparation of vegetables. At a stroke, a major criterion of excellence and respect was removed; there was now less value in a young man proving himself as a hunter. Indeed, the missionary drew the younger people to him, purposely estranging them from their elders and disrupting the authority structure that underlay the social system. He banned traditional religious ceremonies and rituals that had provided a bond between society and the sacred sites scattered over their territory (these were now seldom visited since it was necessary to stay close to the mission for food supplies, and so on). But the new religion that he brought was distant and ethereal; far from replacing the old it made no mention of the origins of accepted rules for marriage and the like, or of important places, objects and traditions. Amid this disruption of their traditional life, tribes tended simply to fade away. People would die before their time and few children were born, by comparison with the pre-contact period.

Those tribes which were taken away from their traditional territory and placed at government settlements in some alien place were worst affected. The Queensland government often divided up the remains of a tribe – those that had not been shot or poisoned by stockmen, or been killed by measles or influenza – between two or three different settlements, to break up any remaining solidarity and spirit. Far away from their traditional lands – from which they believed their spirits had come at conception and to which they should return after death – the path towards extinction became shorter. The most horrifying example of genocide from anywhere in the world was surely Tasmania: the original population of three to five thousand – before the white invasion in 1803 – was halved each decade, partly by introduced diseases, partly by murder. Then in 1830 the 300 that remained were moved to an island in the Bass Straits. Separated from their homeland, numbers decreased even more rapidly – there were 45 left in 1847 and only 13 by 1861; Truganini, the last full-blood Tasmanian, died in 1876.

Some tribes on the mainland were treated almost as badly as the Tasmanians, there being not a single full-blood left after seventy years or so of white contact. Others were treated more kindly and their numbers decreased more slowly. But decrease they did – it was believed inevitable that the whole Australian race would soon become extinct and for almost a hundred years official policy was to 'smooth the pillow of the dying race'. The trend of population decrease reversed about 1950 (although it took a few years for this to be noted by the governments). The reversal was due partly to better medical care but mostly to the fact that those Aboriginal Australians who had been able to adjust to the white man's ways had considerable survival potential; they were able to adapt and to increase their numbers – often (I was told) in the hope of regaining their traditional numbers and ousting the invader. At the same time a more pacific attitude led to less interference in the life of those tribes in remote areas that had not already experienced full-scale European contact, so that they stood some chance of being allowed to continue their traditional ways in a bicultural setting.

The role of language in this process of tribal disintegration cannot be overemphasised. We stressed in chapter 2 that every political unit prides itself on having its own national or tribal 'language'. If a minority group is to maintain its ethnic identity and social cohesion it must retain its language (the Basques and the Jews provide two quite diverse examples). Once a group has lost its language, it will generally lose its separate identity and will, within a few generations, be indistinguishably assimilated into another, more dominant political group.

On many missions and government settlements the use of Australian languages was discouraged. Children between the ages of about ten and sixteen were placed in separate boys' and girls' dormitories; they would be allowed to visit their parents only on Saturday afternoons. Thus the handing down of traditional skills and lore was interrupted. Most of all, children from different language groups were deliberately mixed in the dormitories; they were laughed at – and sometimes punished – for using their own tongues. There were exceptions – an occasional missionary learnt the local language, wrote a grammar of it, and began translation of the Bible – but the pattern I have described applied in the majority of settlements and missions until very recently. Indeed, the received opinion that Australian languages were primitive, childish things was instilled into the children, so that they came to despise their parents' way of speech, and the traditional legends that were told in it.

It is only within the last ten years that there has been among Aboriginal Australians a resurgence of pride in their traditional life-styles, values and, especially, languages. For instance, when I went to Yarrabah settlement in 1971, to study Yidiny, there was only one elderly man there who could speak it fluently. But the Aboriginal Council asked that lessons be devised so that members of the tribe could learn back their own language. This was attempted, and assisted in the rekindling of a feeling of ethnic identity, although it was too late – and there was too little motivation – for the language to become once again a living tongue. Another example concerns the tribes speaking Banjalang, in north-east New South Wales; in 1976 a linguist worked for six months, at the request of the people, producing primers for use in the preschool and related activities. It had limited success as a language-teaching device, but helped enormously in restoring lost pride in the tribal past. Since there are only a scattered handful of old people who can speak the language it has no chance of surviving for very much longer; however, the inclusion of a sprinkling of Banjalang words in the Aboriginal English of the area acts as a vital means of group identification. A similar situation prevails around Perth; we noted that Nyungar – previously the word for 'man' or 'person' – is now used to describe the simplified form of this local language that is still spoken by a few old people. But Nyungar is also used as the name for the local dialect of Aboriginal English that includes a few Australian words and phrases – an example was given at (3) above – and 'as an adjective describing their country, their way of life, and other features of their culture'.

The importance of a common language for ethnic identification can be seen in two contrasting histories from the Cairns area of North Queensland (see map 4). Populations of all tribes dropped dramatically in the first decades after white contact (which began in the 1860s), so that they were below the minimum workable number for social obligations, marriage rules, and the like (cf. 2.5). Survivors from the Girramaygan tribe and the southern group of the Jirrbalŋan tribe gathered at Murray Upper, an isolated settlement well away from the police and pubs. There they effectively formed a new macro-tribe, pooling their numbers and resources to continue with traditional life and religion; although they still recognised that Girramaygan territory was on one side of the river and Jirrbalŋan country on the other (see 2.3), their pattern of residence no longer conformed to this rule (there is evidence that it did before white contact). What made this tribal pooling possible was the fact that the two 'tribal languages$_1$' were in fact dialects of Dyirbal, a single language$_2$ (in the linguistic sense – see 2.3); each person could speak in his own dialect and be fully understood by members of the other tribe (while also having a good command of English, for interaction with white settlers). They survived to become the largest cohesive Aboriginal group in Queensland that is not under direct mission or government supervision. Aboriginal children were admitted to the Murray Upper School about 1950 – the number of white pupils had dropped below nine, the minimum number that would justify the government continuing the school, so two half-caste children were hurriedly admitted, full-bloods being allowed in soon afterwards. One headmaster in the 1960s caned children if he heard them speaking their own language in the school grounds. Despite this, the language survived, although the dialect distinction is now nearly gone – young Girramaygan tend to use Jirrbal words (in the few cases where there was any difference). Happily, the present headmaster is sympathetic and interested, encouraging the children to write their own language and to do projects on traditional food, customs and so on, sending them out to interview older members of the tribes. In 1975 the Federal government purchased a small block of traditional land for the exclusive use of the people (they had for one hundred years been barely tolerated squatters on white farms). The future now looks quite bright for the Dyirbal language, and its speakers.

Fifty miles to the north, the tribes around the Atherton Tablelands were also seriously depleted. I was told that around 1920 the old men from a number of tribes decided that a new macro-tribe should be established, made up of all the surviving Yidinyji, Ngajanji, Jabuganyji and northern Jirrbalŋan; marriages were purposely arranged across old tribal boundaries to cement this new political unit. The plan failed, a major factor being that there were a number of quite different languages$_2$ involved. Dick Moses – who described this plan – was a Yidinyji who was assigned a Jirrbalŋan wife; both had some English as a second language, and they conversed in this, neither learning the other's native tongue. Today there are in this region many isolated groups of Aboriginal Australians, almost all speaking English, by-and-large lacking any knowledge of their traditional foods and how to prepare them, let alone of moieties, legends and traditional religion. This is in striking contrast to Murray Upper where – almost entirely because the two tribes that merged spoke dialects of a single language$_2$ – aspects of traditional life are maintained in a cohesive, bilingual and bicultural Aboriginal Australian community.

We have already referred to the range of English dialects available to an Aboriginal speaker, from which he would choose a style appropriate to the social circumstances. There is in addition the fascinating question of code-switching – almost all speakers of Australian languages also know English and switch from one language to the other according to the context of discourse. Indeed, it is common to encounter a country policeman, say, who will aver that none of the Aborigines in his area speaks anything but English, whereas most of them use an Australian language for normal everyday conversation (but never in the hearing of the policeman, or of most other white people); in this way, indigenous language, culture and social structure are continued in a clandestine manner, without risk of official interference.

In addition to social code-switching of this type, it is common also to encounter conversational code-switching, where a speaker will blend together elements from English and from his native language within a single utterance, sentence, or even phrase. This is a common phenomenon, found in contact situations from all over the world. (It does not in any sense impugn the vitality of either language, or the speakers' competence in them and ability to keep them quite separate when this is required.) No full-scale study has yet been undertaken of the fascinating question of what motivates such switching in Australian communities. I undertook a preliminary investigation of code-switching in Dyirbal, from a long, secretly recorded conversation involving three old ladies – Jarrmay, Jubula and Mijabunjul – who were all fluent in Dyirbal and English but would normally use Dyirbal amongst themselves. Over 90 per cent of the twenty-minutes conversation was Dyirbal. English was sometimes used for referring to European artefacts or typically European activities, as when Jarrmay said *You ring him up* in the middle of an otherwise wholly Dyirbal exchange. On this topic, it is relevant to note that at Yirrkala, in Eastern Arnhem Land, Yolŋu-speakers tend to talk and curse in English – which is not their first language – when drunk; they say they do this because there is a tendency to say wild things when drunk, and to insult someone in English is more forgivable than an insult in Yolŋu. There is also the fact that young people at Yirrkala today are reacting against some aspects of traditional culture, with both drinking and the use of

English being expressions of this conflict. Something can also be repeated in English, for added emphasis, as when Mijabunjul said *Wunyjan Jarrmay, where's the old lady?*, literally 'Where's Jarrmay, where's the old lady?'

However there does not seem to be any explanation for many English insertions into what is primarily a Dyirbal discourse. Consider the following exchange, which has more English interjections than most parts of the conversation. The recording was made at the beginning of summer and the three ladies are discussing when the first storm of the wet season could be expected. Mijabunjul has just suggested that they should go to visit a certain traditional site one fine day, but then comments that the fine weather may be drawing to a close, at which Jarrmay intervenes:

(5)
Ja: *gambal*
'Storms [are due].'
M: *gambal*
'Yes, storms.'
Ja: *gambal giyi*
'These storms.'
Ju: *wiyamalirru giyi?*
'What will [you] do about them?'
M: *jamuban bayi biŋgirŋunu*
'They just come out of this heat.'
Ju: *jindany?*
'Then it rains.'
Ja: *time now, start now giyi*
'These.'
M: *bayinjana giyinyuŋgul jindajindayarrany*
'All of these [storms] will be starting to rain a lot.'
Ja: *gambal janyja*
'It's storm-time now.'
M: *garrimara*
'In the summer.'
M: *bayimbayigali gingin waynyjin*
'There's a black cloud coming up now.'
Ju: *oh no, I see lightning, just about daylight, I think.*
M: *janyjarru + girra*
'[There was] definitely [lightning] earlier on this morning.'
Ju: *yaliyuŋgulgali baninyu bayi yuŋgul barmbiŋu*
'It was coming with one flash of lightning down this way.'
Ja: *ŋumarranyu bayi, janyjarru?*
'Was there thunder rumbling earlier on today?'
Ju: *nyuwala*
'[No, lightning] by itself.'

I can hazard no explanation as to why Jarrmay and Jubula inserted odd bits of English into this conversation. Since all speakers know both languages, they have the choice of switching from one to another, at whim, as it were, and appear just to have exercised this choice here.

An English interpolation will most frequently involve a complete sentence or clause, as with Jubula's *oh no, I see lightning, just about daylight, I think.* It can involve an English adverb to a Dyirbal clause – *ŋaygu ŋalgiya 'nother way* 'he's related to me as ŋalgiya by a different kinship path' – or an English noun phrase or noun within a Dyirbal sentence – *giyi janyja change ŋaygu banaga* 'my change got left behind [on the shop counter] just now'. What is not encountered is an English verb being inserted into an otherwise wholly Dyirbal sentence.

There is one example of English fulfilling an unusual sociolinguistic role in a traditional Australian community. Anindilyakwa, spoken on Groote Eylandt, is perhaps the most difficult of all Australian languages, with a very complex grammar – involving much cross-referencing and agreement – and with even the commonest lexical roots being generally three or four syllables long. Velma Leeding has reported a special speech style for speaking to babies, involving simpler lexical forms than the everyday language (to which few if any grammatical affixes are attached); children will use these forms up until the age of six, after which they will employ normal Anindilyakwa lexemes. Words in baby talk fall into three groups:

[a] simplified versions of normal Anindilyakwa words e.g. *wuwata* 'dog' instead of the regular *wurru+warta*; *yijaya* 'seagull' rather than *yijarra*.

[b] special forms that occur only in baby talk e.g. *ama* 'a drink' and *nyanya* 'food' where the adult language has *aŋamina* and *anhiŋa* respectively.

[c] English words, suitably cast into Anindilyakwa phonology e.g. *mami* 'mother' in place of *ŋarnta*. In this society English functions as a second language for most adults; it has also been exploited to augment the existing baby talk vocabulary.

There are also a number of forms that probably originated in baby talk but can now be heard from speakers up to the age of thirty or so; these are short English correspondents for rather long Anindilyakwa forms:

loan word	traditional Anindilyakwa form
payta	*takuwarrkuwarrka* 'spider'

kirajapa	*tumaminjarrminjarrka* 'grasshopper'
prɔki~piraki	*tilyapurnta* 'frog'

The community has recently asked that traditional Anindilyakwa terms should be taught in the school. Young children are now replacing *payta* by *takuwarrkuwarrka* etc., as they replace *mami* by *ŋarnta* and *wuwata* by *wurruwarta*, by about the age of six.

The main point we made at the beginning of this section is the necessity for there being an identificatory language or dialect if a tribal group is to survive as such, retaining a sense of itself as a political unit and effectively comprising a bicultural community within the wider context of white Australia. There are a fair number of Australian communities whose language, culture and political organisation are in a healthy state and could survive indefinitely. Most of these groups – like the Yolŋu and Warlpiri – have had intensive white contact only quite recently. But there are some groups that were lucky enough to encounter a sympathetic and perceptive missionary – the Guugu Yimidhirr, for instance – and as a result still maintain their own language and continue with aspects of traditional life despite about a hundred years of white contact.

Many tribes have completely disappeared; there are others that retain a considerable population but have quite lost their language – largely as a result of the dormitory system – and must be indistinguishably assimilated into white society, almost inevitably at the lowest level. Their remaining sense of 'Aboriginality' depends to a large degree on a few linguistic shibboleths, the inclusion of occasional Australian words in the English sentences they use or even the use of a 'dialect grammar' – which may owe something to a now-extinct Australian language.

In some areas tribal numbers fell rapidly just because of imported diseases and the inevitable murder. Even when there are too few people left to continue social traditions, the language may still survive and is often the last cultural element remaining. Songs, as we mentioned in 3.2, can be learnt and remembered even when some of their words are not fully understood. In 1964 I recorded from Nita Munro, at Gin Gin, Queensland, a song that her grandmother had made up, probably around the turn of the century, to scold a husband who had been spending too much time talking to the barmaid in the pub. The song, in which the grandmother threatened to scratch out the barmaid's eyes, has a lilting, syncopated melody. It freely mixes elements from English and from the now extinct Gabi language (only some Gabi words are recognisable – *mii* 'eye' for instance):

(6) ŋagaliba – maŋarrnyiba
ŋagaliba – maŋarrnyiba
mind you're gonna – going bana
find the money, nyulu can do
mirrim can do, mii bagany, good old man

4.3 Bilingual education

A sine qua non for life in a modern industrialised society is literacy. It is seldom realised that literacy is a mixed blessing, that it has many drawbacks in addition to its obvious advantages, and that literacy must be brought to a society in a careful and planned manner if it is not to disrupt the basis of that society.

The first point that must be made is that there is no necessary connection between literacy and culture. Many totally illiterate societies have rich repertoires of oral narrative, poetry and song in addition to established traditions of dramatic performance; every member of the community is familiar with a wide range of such work and may himself be a creative artist in several genres. Compare this with huge segments of modern industrialised society where the major application of literacy is reading tabloid newspapers; few members of such a society ever read or listen to poetry – let alone compose poems themselves – or take part in a dramatic performance; the major leisure activity is watching television.

As G. L. Kittredge wrote: 'the ability of oral tradition to transmit great masses of verse for hundreds of years is proved and admitted ... To this oral literature ... education is no friend ... When a nation begins to read ... what was once the possession of the folk as a whole, becomes the heritage of the illiterate only, and soon, unless it is gathered up by the antiquary, vanishes altogether.' An anthropologist describing a community in the New Hebrides noted 'without writing, memory is perfect, tradition exact'. As Plato warned 'this innovation [of letters] will produce forgetfulness in the mind of those who learn to use it, because they will not exercise their memory'. Note also W. G. Archer's conclusion that 'if we have to single out the factor which caused the decline of English village culture, we should have to say it was literacy'. An oral literature is available to all members of a community and its performance and transmission is a creative social undertaking; members of literate societies can choose to learn and read very little, working largely on an individual basis, without any sense of creativity or of enlarging the tradition. As a further corollary, there is strong evidence that people without writing systems are more open to learn new languages, and are able to achieve a greater measure of success at this than are literate people.

The finest essay on this topic is *The bugbear of literacy* by Ananda K. Coomaraswamy (from which the quotations of the last paragraph were taken); this should be required reading for anyone concerned with formulating educational policies and curricula, and with teaching them. Coomaraswamy points out that for us 'to impose our literacy (and our contemporary "literature") upon a cultured but illiterate people is to destroy their culture in the name of our own'. He also draws attention to the folly of introducing curricula that teach European skills – not to mention European history and the like. As Albert Schweitzer put it 'we proceed as if not agriculture and handicraft, but reading and writing, were the beginnings of civilization'. Surely any scheme of education must train children in the skills that are needed and valued in their community, and should deal first with their own traditions and environment, later relating these to a wider study of other peoples and cultures.

Literacy is, of course, an indisputable aid to communication and the wider sharing of knowledge. Any community that wishes to adopt writing and reading should encounter minimal interference with their traditional cultural and social system if certain basic guidelines are followed; it will be useful to outline these, before discussing the history of Aboriginal education.

Firstly, literacy must be introduced in the native language of the community, rather than being forced on children in terms of a language like English which, although a lingua franca for the nation to which they belong, is very much a second language for children in the community and the representative of a foreign culture. Secondly, instruction in reading and writing should immediately be made available to everyone in the community, not just the children; indeed, a strong case can be made for first offering literacy training to adults, with the newly literate adults then teaching the children. Thirdly, literacy instruction should be oriented to describing culturally relevant skills and traditions and perhaps introducing new information and techniques that are relevant to the people and their environment. Fourthly, the traditional oral literature should be written down as fully and as soon as possible; if it is not it may well be forgotten – or remembered only in skeletal forms – within one or two generations. This recording must not be left entirely to children, who may not have mastered the full details of story and song cycles; it is is partly for this reason that literacy should be extended to adults, so that the recording of traditional epics can be a cooperative effort shared by the whole community. Fifthly, there should from the first be established the idea that every reader is also a writer, so that the tradition of creative participation in verbal art is continued in the written as well as the oral medium. If these guidelines are followed, literacy can be an ancillary to the oral tradition, with the latter continuing relatively unimpeded in the form of ceremonies, social recitations, songs, and the like. The written record may be referred to and embellished; the fact of providing a written account of an important cultural tradition can – under appropriate social conditions – reinforce that tradition.

Once these points have been observed, literacy can then be extended to the national lingua franca – English, in the case of Australian communities. This will enable Aboriginal Australians to proceed to secondary and tertiary education – for which textbooks must necessarily be in English – and to have access to a wide range of knowledge from outside their own community. If the guidelines of the last paragraph are followed, there need be no conflict or interference with traditional language and culture – bilingual and bicultural Aborigines should be able to feel at home in both tribal and national social contexts, and to move freely between them. But if literacy is foisted on a tribal community in a thoughtless way – with children being forced to read and write only in English, say – then social disintegration is inevitable. Traditional literature will in a few years be irretrievably lost; artistic, craft and environmental skills may be devalued and forgotten – the traditional culture will be simply destroyed and the people left as bewildered aliens, marooned in a no-man's land on the fringe of the white community.

With the exception of a handful of missions, which have pursued a fairly enlightened educational policy, with some instruction in the local language, the record of church and especially government authorities in Australia has been very poor. Children from tribal communities – where the traditional language and culture were still fairly intact – were forced to go to school, and expected to learn to read and write in English, a language which in many cases they could scarcely speak or understand. The remainder of the syllabus was equally inappropriate – the Queensland government, for instance, insisted for many years that a single curriculum should cover the whole state, Wik-Munkan children at Aurukun and Guugu Yimidhirr at Hopevale being made to follow exactly the same set of topics as city children in Brisbane (this syllabus was peculiarly inappropriate even for white Australian children, with its emphasis on learning about the kings and queens of England, phonetic tests that took BBC English as the norm, and stories that referred to British animals, plants and seasons). Schools in remote Aboriginal settlements were often manned by inexperienced staff, straight out of teachers' college, who had little interest in the Aborigines and had had not one jot of instruction concerning Aboriginal society or about techniques for instructing children from a non-European background. Not surprisingly, the results have in many cases verged on the disastrous.

In 1963 the Federal government initiated 'an investigation into the curriculum and teaching methods used in Aboriginal schools in the Northern Territory'. The Watts–Gallacher report did note that 'even in a situation like that in the Northern Territory where the Aborigines as a minority group need to become proficient in the English language, it cannot be doubted that the language which should be used as the medium of instruction in the early years of schooling is their own vernacular language. The education of young children in their own tongue will not only help the children to feel secure in the school situation but will also promote their concept development and, importantly, will help them to feel that school life is not divorced from village life. Research suggests that children who achieve literacy in their mother tongue subsequently achieve literacy in a second language more readily and more successfully than children whose first attempts at literacy are in a foreign language.' But this was then dismissed as an impractical goal: there were too many languages, there would be difficulties in preparing the necessary number of primers and textbooks and 'it would be impossible to require that all teachers should master an Aboriginal language'. There was not at the time a single department of linguistics in any one of Australia's universities. In a country in which white children could gain admission to university without having studied any foreign language at school, and in which no foreign migrant or even Aborigine has the legal right to an interpreter in court ('the language of the courts shall be English'), it is scarcely surprising that little more than lip-service was paid to the idea of bilingual education, which had by that time been adopted by many other countries.

The sort of schooling which was directed at Aboriginal children from 1900 or earlier until about 1973 (or until today, in some States) has had a largely negative effect. Many Aboriginal Australian children regarded school as a white man's game, that had little relevance to the pattern of living and little usefulness; only a minority did learn to read and write. The net effect was that a generation of Aborigines were lost to one culture, without having been taken into another, knowing something of two languages but being master of neither. It was often the case that mission-educated children would speak only an attenuated version of English, with a greatly impoverished vocabulary. They had lost traditional hunting and craft skills but there was no 'job' – in the European sense – for them. Rather than producing bilingual and bicultural citizens, the Australian education system was making Aborigines into demi-lingual demi-cultural nobodies.

The nadir was documented by an Australian government film *Walking in the sunlight, walking in the shadow* (1970), ostensibly made to show the 'educational and social integration of Northern Territory Aborigines'. In fact the film attempts to show Aborigines in the worst possible light – with scenes of drinking and importuning; it is revealing of white attitudes. One teacher says, approvingly, 'our educational system makes these youngsters question the whole basis of their traditional society ... as this comes about, their society is going to pattern itself largely on our society ... There are some pretty basic values to be challenged ... the old people have a vested interest in maintaining the traditional way of life and the young people are in the position where they have to see change. Now this is only going to come about by conflict ...' He was foreseeing the destruction of traditional society by unthinking introduction of the European educational system. There is no mention in the film of Australian languages, although one speaker does mention 'English is a foreign language to them'. The overall feeling is summed up by another teacher who says 'I really can't see much future for the children we have in school at the moment.'

Then, in late 1972, educational policy towards Aboriginal Australians suddenly altered course. Within two weeks of the election of a Labor Government, after twenty-three years of Liberal rule, it was announced that 'Aboriginal primary schoolchildren living in distinctive Aboriginal communities will be taught in their own languages', that 'they will also be taught traditional arts, crafts and skills, mostly by Aborigines', and that 'English will be taught only as a second language'. This initiative by Kim Beazley, Federal Minister for Education, was supported by Prime Minister Gough Whitlam with the comment that 'tribal cultures should be preserved, not crushed'. The *Sydney Morning Herald* supplied an apt headline – ABORIGINAL CHILDREN TO KEEP OWN DIALECTS; they could have added that only in this way could they hope in the long term to keep their own culture, to retain any sense of 'Aboriginality'.

Things moved quickly after the announcement of 14 December 1972. An Advisory Group of three educationalists spent three weeks in the field, from 22 January 1973, and presented their recommendations in March; simultaneously, bilingual teaching commenced in five schools, involving five different languages. Some of these languages had already been studied and provided with orthographies and grammars, and there was a good missionary linguist on hand to advise and assist. In the case of others not enough was understood of the structure of the language for a bilingual programme to be properly planned at that time (unfortunately, the Watts–McGrath–Tandy report lacked the benefit of any linguistic expertise). But a start had been made, that could be consolidated and built on. Indeed, when another Liberal government was returned in 1975 they retained this and the best of other Labor initiatives; by 1977 bilingual education was under way in eighteen Northern Territory schools involving in all thirteen languages. It only remains now to try to persuade the governments of Queensland and Western Australia to commit themselves fully to a similar bilingual education philosophy (South Australia pioneered bilingual education, well before 1972; there are no Australian languages still actively spoken in the other States).

Aboriginal children were no longer to be treated in school as if they were some sort of maladjusted white children; their parents were no longer to see the school as a disruptive force which tried to alienate the children from their age-old traditions and laws. The 1973 report recognised that: 'The school should be the agent of cultural continuity rather than of cultural discontinuity, with the non-Aboriginal Australian culture being introduced in a manner acceptable to the people. The school should help to foster the children's pride in their ethnic identity and aid their development of favourable self-concepts. The school, through its teaching personnel, should offer the children effective and acceptable models from within their own ethnic group. The school program should be developed and implemented in such a way that the adults of the community feel an involvement in and responsibility for education of their children. The above goals can be achieved only when the language of the community is an integral part of the school program.' If all schools follow these principles, education should be – and be seen to be – relevant to Aboriginal Australian traditions and aspirations, and this should provide the all-important factor of motivation that will enable a child to derive the maximum benefit from his schooling. Interestingly, there is evidence that children coming from a fully tribal background, with full command of their own language, tend to do better in all subjects than those from semi-acculturated backgrounds, such as were produced by the earlier mission/school system. Those who retain their full black cultural heritage are more able to handle the demands of white culture – becoming fully bilingual and bicultural – than those who stand somewhere between the two.

It is still too early to attempt even a preliminary evaluation of the bilingual programme and the way it is being put into action. Stephen Harris has emphasised that 'the vernacular on its own cannot overcome inadequacies in curriculum design and teacher attitudes and administrative ways of doing things that are still basically oriented to monocultural English, Western and technological priorities'. He also emphasises that the social effects of the programme must be considered – it should be introduced and administered in such a way that there is no violent disruption of social roles and values in the community.

The proposal has been to start literacy instruction in the local language in infants school. Oral practice in English – which is at best a second language for the children – continues from preschool through infants; literacy work in English will be commenced in late infants or early primary, after literacy in the first language is well established. There would be a gradual switch-over to English as the main language of instruction during the primary years. The local language would still be retained for part of the curriculum – study of Aboriginal art and craft, and composition and language work – in postprimary schooling. Since scarcely any trained teachers speak Australian languages, and few Aborigines were trained teachers, the 1973 report suggested that in the first years teaching be through teams consisting of Aboriginal and non-Aboriginal members; at the same time, an intensive training programme for Aboriginal teachers should be embarked upon.

Literacy expert Sarah Gudschinsky and linguists Kenneth Hale and Geoffrey O'Grady made further recommendations about the bilingual programme in 1973 and 1974. They emphasised that it was necessary to 'flood the place with literature'; that every reader should also be a writer and that duplicating facilities be provided so that a library of original work in each language could quickly be established. What was probably not stressed sufficiently was that traditional story and song cycles should be recorded NOT just by children but by the whole adult community, as a true and accurate record of accepted traditions, laws and customs. As we have already stressed, an oral tradition is unlikely to survive unassisted in a literate community; it is likely to be known best by those members of the community who are not literate. If literacy is introduced, definite and concerted efforts must be made immediately to record the oral tradition.

An important prerequisite for education in an Australian language is a careful linguistic analysis of the language, with a well-thought-out orthography and an understanding of the intricacies of grammatical structure, so that a logically organised curriculum can be devised. It began to be realised, during 1973, that 200 years of linguistic neglect could not be remedied at the stroke of a pen. In a few places the required groundwork had been done by linguistically trained missionaries or by the occasional academic linguist, but there were many viable languages which had never been studied, not even a basic orthography having been worked out. The Federal Department of Education was soon employing some professional white linguists to work on critical languages. But it was realised that the ideal was to train intelligent, well-motivated native speakers of Australian languages in the principles of linguistics and of bilingual curriculum development so that they could analyse their own language, write orthographies and grammars, and devise suitable teaching materials. As has already been noted (see 1.3), in 1974 a School of Australian Linguistics (SAL) was set up, within the Darwin Community College, with precisely these aims. It is hoped that before long Aboriginal linguists will be taking their place on the staff of the SAL, and that there may even be some interested in pursuing further academic studies so that courses on Australian linguistics in Australian universities may one day be taught by linguists whose native language is an Australian tongue.

The 1973 report stressed that it should be the Aboriginal people in each community who would decide whether they wanted the bilingual programme and, if so, the language or languages in which it should be conducted. In some places there was no difficulty of choice – 95 per cent of the people at Yuendumu speak Warlpiri and the remainder, whose first language is Pintupi, also know some Warlpiri as a second language. But in other communities there were a number of languages with fairly equal numbers of speakers, as a result of a number of tribes being brought into a central settlement or mission in earlier days.

There are instances of an Australian language being accepted as the lingua franca for a whole area, gradually ousting other languages which had smaller numbers of speakers. Wik-Munkan is now a lingua franca for many communities in the western part of Cape York Peninsula, for example, and all middle-aged and younger members of the Warlmanpa tribe living at Warrabri now speak only Warlpiri. But in each case this has been a fairly natural and gradual process – following the upheavals of white invasion, and movement of Aboriginal people to government settlements, often away from their traditional lands – and it was not the result of any conscious decision. If just one of the languages in a given community is CHOSEN as the vehicle for education and literacy training, then a DECISION has in effect been made that will establish a lingua franca, and is likely to lead to the gradual elimination of the other languages. It is realised that decisions of this nature have important implications, and careful consideration is being given to them.

Some communities involve an amazing array of languages, such that no ONE could possibly be chosen as medium of education for the whole community. The settlement at Maningrida, in Central Arnhem Land, was established only in 1957. Soon a thousand Aboriginal Australians – speaking at least ten quite distinct languages, some in several different tribal dialects – were living there. From 1973 on, a number of homeland centres were established, on traditional tribal territory, at which most people lived for a part of the year, alternating their residence between the central settlement and the homeland centre appropriate to their tribe or local group. There is a great deal of multilingualism at Maningrida; a survey conducted by Vanessa Elwell showed that people claimed to be able to speak between two and six languages each (the average was just over four languages for each adult). Which language any speaker will use depends on the social circumstances. Tommy Wokbara, a cashier in the supermarket, has Gunibidji as first language but he can also speak English, Gunwinygu, Gunbalang, Maung, Nakara and '"some"

Burarra (probably sufficient to function efficiently in the shop with Burarra customers)'; he will generally speak in the language of the customer (something that may correlate with the fact that no customer is allowed credit!).

There are over 100 people who speak Gunibidji as first language; the Maningrida settlement lies in their traditional territory. Similar numbers can be found for Nakara, and for Djinaŋ, from further to the east; there are about 350 first language speakers of Burarra, which intervenes between Nakara and Djinaŋ. There are only a few dozen speakers of Gungoragone, from south of Maningrida.

The most common second language at Maningrida is Gunwinygu; this is the first language of many people at settlements further west but has very few first language speakers at Maningrida. Burarra is the next most common second language; but people who have Burarra as first language tend to know fewer languages than members of other groups. There are a fair number of people in the area who have Rembarrnga as a first language, but scarcely anyone in Maningrida knows it as second language; all or almost all Rembarrnga also know Gunwinygu, which is the language Tommy Wokbara would use with a Rembarrnga customer. Most of the younger people from every language group have some command of English and use it when addressing whites; but English is seldom used between Aborigines at Maningrida, even when they have different first languages.

No language could be described as a 'lingua franca' at Maningrida today. Furthermore, Elwell reports widespread social antipathies between different groups which make it unlikely that any one language would develop as a lingua franca. Many people favour the local language, Gunibidji, but the Burarra are hostile to the Gunibidji and would be unlikely to support the adoption of that language. People with Burarra as first language are perhaps the largest group – with around 350 members – and some members of every other group have Burarra as second language. But hostility of the Gunibidji towards Burarra is strong: 'within the school, the disbanding of a class composed entirely of Gunibidji children a couple of years ago, and their dispersal into mixed (largely Burarra) classes, led to the withdrawal of almost all the Gunibidji children from the school'.

Some linguistic work has been done on these languages, by well-trained missionaries, university graduate students and linguists employed by the Department of Education; a little work has been done by native speakers who have taken courses at the SAL. Some educational programmes have already commenced at the homeland centres. But the community has not yet decided which languages it would like to adopt for bilingual education at the central Maningrida school; it is not a decision to be taken lightly.

5

Vocabulary

A linguistic description of any language has three main components. Firstly, there must be a phonetic account of the sounds employed in the language, and their articulations; related to this is a phonological description, detailing which phonetic contrasts can carry a meaning difference in that particular language. We discuss the phonetics and phonologies of Australian languages in the next chapter. Secondly, it is necessary to compile a dictionary of all the noun, verb and adjective stems of the language. Thirdly, there must be a grammatical description: this describes the ways in which words can be put together to form a sentence, the ways in which verbs inflect for such categories as tense and aspect and nouns for such categories as number and case, and so on.

In chapters 9–13 we discuss the grammatical structure of Australian languages. The first few pages of chapter 9, in particular, provide an introduction to the structure of words, formed by derivational and inflectional processes applying to a basic lexical root. The present chapter briefly surveys some of the semantic properties of Australian vocabularies.

Each lexical item can occur in a number of different grammatical forms; we say that *give*, *gave*, *given*, *giving* and also *gift* are different forms of a single lexical item (sometimes referred to as a 'lexeme'). The various forms that each lexeme can take, and their functions, can be inferred from information given in the grammatical description.

In Australian languages the base form of a noun is used in citation – for naming, or when focussing attention on the meaning of that lexeme – and is generally also employed for intransitive subject and transitive object functions; inflectional suffixes will be added for other syntactic functions. Thus in Warlpiri both the citation form and the base form of the word meaning 'woman' is *karnta*; this is a free form, which is used without an affix in intransitive subject function e.g. *karnta wangkaja* 'the woman spoke'. But in transitive subject function it has the form *karnta+ngku*, with the ergative case inflection *-ngku*; in indirect object function it is *karnta+ku*, with dative *-ku*; and so on. Adjectives generally show exactly the same morphological possibilities as nouns.

For verbs in Australia languages it is convenient to recognise a base form, but this usually cannot occur by itself – it must take a non-zero tense (or other) inflection. In Warlpiri we take *wangka-* as the root 'to speak'; this is a bound form, which must take an inflectional suffix – the forms of the verb include *wangka+ja* 'spoke', *wangka+nya* 'is speaking', *wangka+ju* 'will speak', *wangka+ya* 'speak!', among others. For citation, an inflected form of a verb must be used (never the root).

No comprehensive dictionary has yet been published for any of the 200 languages of Australia, and only a handful of medium-sized vocabularies are available. Comments in this chapter are largely based on my own field research – work which is proceeding on a detailed comparative dictionary of nine dialects of Dyirbal, and of neighbouring languages – and on unpublished sources.

Many Australian languages have just one lexeme referring to each class of things. In Dyirbal, for instance, there is a single noun *guda* 'dog'. There are, however, a number of languages which are unusual in that virtually every lexical item has a number of synonyms. Thus 'dog' is referred to in Warlpiri by (i) *maliki*, (ii) *jarntu*, or (iii) *ŋurra+ŋawurrpa* (this last is a derived form, literally 'camp+dweller'). During his fieldwork amongst southern Warlpiri at Yuendumu in 1959, Kenneth Hale found that *maliki* was the term in general use; he recorded *jarntu* only from speakers of the northern dialect; when Hale returned in 1966 he found that both *maliki* and *jarntu* were in general use at Yuendumu. (There is also a fourth term, *kunapalya*, that is restricted to the Yikirrinji avoidance style – see 3.3.)

I mentioned in 2.1 that when a person dies both his name, and also any other form that is similar to it in sound, will be tabooed. This tabooing applies to lexical items – nouns, adjectives, verbs, and so on – and also to grammatical words; in 2.1 we mentioned the tabooing of the first person singular pronoun *ngayu* 'I' from dialects of the Western Desert language, on the death of a man named Ngayunya. In a language with a number of synonyms for each lexical item, one of the 'reserve' forms that had previously been little used could become the main term after a tabooing; Hale mentions that 'if a man dies whose name contains, say, *maliki*, thereafter *jarntu* might be used as the word for "dog" until enough time passes to permit *maliki* again. If during this period a man called Jarntu+jukurrpa, say, dies the word *ŋurra+ŋawurrpa* might be used, and so on.'

Languages which do not show Warlpiri-type multiple synonymy – and the majority of Australian languages do appear to lack this characteristic – may replace a tabooed lexeme in a quite different way – by borrowing a new form from a neighbouring language, or by coining a new compound, or, occasionally, by shifting the meaning of a term that has been used for something of minor significance, to be the name for something related to it which has more cultural importance. Some dialectal semantic differences may be due to 'death taboo'-motivated semantic shifts of this type. Thus, northern and southern dialects of Dyirbal have *juja* 'back, dorsum' and *mambu* 'part of rump'; but in two closely related central dialects there is no form *juja*, and *mambu* has shifted in reference so that it now signifies 'back, dorsum'.

5.1 Lexical forms

A quick comparison of the vocabularies of two Australian languages usually uncovers a few words that have identical or almost identical form; but the remainder appear to be totally different in form. Table 5.1 gives specimen comparison of important body-part and other nouns in four languages, providing a fair impression of the picture that is gained by large-scale comparison; cognates are underlined. (We use the standard practical orthography for Western Desert; *p, t, tj, k, ng* correspond to *b, d, j, g, ŋ* for the other languages.)

The regular correspondence between *dh* and *j* – for 'tongue' and 'foot' – is discussed in 6.4, 6.5.1. 'Eye' is *miil* in many languages, a single syllable with a long vowel; the length has been dropped in Yuwaalarraay, and the form has been reinterpreted as having two syllables in Gugu-Yalanji (in this language all words except two are disyllabic or longer – cf. 6.1). There are other examples of the *y–d* and *r–l* correspondences, to support those in 'teeth' and 'hand'. Yuwaalarraay has quite recently undergone regular changes whereby *r* was lost between two identical vowels, explaining the form 'hand'. In addition, *rr* changed to *r* in Gamilaraay, in 'teeth' and in other words, and then in the Yuwaalarraay dialect *r* became *y* between two non-identical vowels.

Sir George Grey had, in 1841, noted forms like *miil* 'eye', *jalany* 'tongue', *jina* 'foot', *mara* 'hand', and *guna* 'faeces' occurring in languages from different parts of the continent; this list was enlarged by E. M. Curr in 1886 (see 1.3). When Arthur Capell looked at the matter

Table 5.1. *Sample lexical comparison*

	Western Desert: Ngaanyatjara dialect (W.A.)	Gamilaraay: Yuwaalarraay dialect (N.S.W.)	Warrgamay (Qld)	Gugu-Yalanji: Wakoora dialect (Qld)
'eye'	*kuru*	*mil*	*gayga*	*miyil*
'teeth'	*kartirti*	*yiya*	*yirra*	*dirra*
'tongue'	*tjaliny*	*dhalay*	*jalany*	*nyabil*
'ear'	*pina*	*bina*	*bina*	*bina*
'head'	*kata*	*dhaygal*	*mugal*	*daŋu*
'hand'	*mara*	*maa*	*mala*	*mara*
'foot'	*tjina*	*dhina*	*bingany*	*jina*
'mother'	*ngunytju*	*gunijarr*	*yabu*	*ŋamu*
'water'	*kapi*	*guŋan*	*ŋalu*	*bana*
'fire'	*waru*	*wii*	*wagun*	*wunju*

again, in the course of compiling his seminal *A new approach to Australian linguistics* in 1956, he was able to expand these lists. But Capell listed only about forty recurring lexical forms, which he called 'Common Australian vocabulary'. This is the basis for the widely held, but mistaken, view that there is little general lexical relationship between Australian languages beyond what is covered by Capell's short list.

It is worthwhile looking at the forms Capell listed. Some are verbs which, although having disyllabic roots in most modern languages, go back to an original monosyllabic form; these are discussed in detail in chapter 12. The nouns are (adjusting some phonological forms in the light of modern knowledge):

bibi	'breast'	*guna*	'faeces'
bina	'ear'	*gumbu*	'urine'
bula	'two'	*dirra* ~ *lirra* ~ *rirra*	'teeth'
bulga	'big'	*mara* ~ *mala*	'hand'
jalany	'tongue'	*mayi*	'vegetable food'
jarra	'thigh'	*mili* ~ *mil* ~ *miil*	'eye'
jawa	'mouth, jaw'	*ŋama* ~ *ŋamu*	'breast'
jina	'foot'	*ŋanga(r)*	'beard, chin'
gada (~*gadha*)	'head'	*ŋurra*	'camp, fire'
gugu	'water'	*walu*	'head, chin'
gujarra	'two'	*waru* ~ *warlu*	'fire'

The words in this list show one unusual feature, when compared with the whole vocabulary of any particular Australian language. There are no instances of *-ju-*, *-nyu-*, *-gi-* or *-ŋi-*, although *-ji-*, *-nyi-*, *-gu-* and *-ŋu-* are represented (*nyii-n* 'to sit' occurs in the verb list – 12.2.2); that is, a consonant articulated with the front part of the tongue is found followed by a high front vowel, and a consonant made with the back part of the tongue can be followed by a high back vowel, but sequences of front consonant plus back vowel or back consonant plus front vowel do not occur in Capell's list. There is in fact evidence of a strong tendency, in the development of Australian languages, for a consonant to assimilate in frontness to a following vowel (or vice versa, for a vowel to assimilate in frontness to a preceding consonant). In chapter 11 we reconstruct the original forms of the second and third person singular pronouns, 'you' and 'he/she' as **ŋin-* and **nyu-* respectively; they have changed to *nyin-* and *ŋu-* in parts of the continent. Similarly, the form 'to give' is *nyu-* (~*yu-*) in the west, but – again with initial consonant assimilated to the following vowel – *ŋu-*(~*wu-*) in the east (see 12.2.2).

The words Capell listed had sequences *-ji-*, *-gu-* etc. in proto-Australian (pA) and did not undergo assimilations; this is why they have identical or similar form in many modern languages. If we do make allowance for vowel and consonant variation engendered by assimilation, many more cognates can be found. Taking just one of many possible examples, compare *dhurrgurl* 'straight' in Ngarluma, from the west coast, and *dhurrgul* 'straight' in Guugu Yimidhirr, from the east coast, with *tjirrkirl* 'straight' in Walmatjari, from the north-western desert. We can show that *dh* and *tj* correspond, as do *l* and *rl* (see 6.5.1–3). The most likely original form is **jurrgul*, with initial **ju* becoming *tji* in Walmatjari, and then the second vowel assimilating to the *i* in the first syllable. (The changes involved in this example are all fully explainable in terms of our discussion in 6.5–6.7.)

When account is taken of phonological changes of this and other types – discussed further in chapters 6 and 7 – and also of semantic shifts (5.4), many more cognates will undoubtedly be found between the languages in different parts of Australia. It is likely that some hundreds of lexical roots will be reconstructable for pA, once good vocabularies of sufficient modern languages are available, and a careful comparison of them is undertaken. (There is further discussion of Capell's list, and the evidence it provides for monosyllabic nominal roots in pA, in 6.6.2).

5.2 Structure of the lexicon

I have already mentioned (1.1) that a speaker of an Australian language would probably understand and use around ten thousand lexemes, something of the same order of magnitude as the working vocabulary of the man in the street in Chicago, Nairobi, Bangkok, or anywhere else in the world. These lexemes are distributed over the various semantic fields very much as they are in the familiar European languages – there are words referring to objects and implements, kin and country, actions and attitudes, and so on. We can, however, draw attention to some semantic properties that are typical of languages of the continent.

Australian languages all have a number of generic terms; a speaker of Yidiny, for instance, will gloss *jarruy* as 'all the birds', *narra* as 'any sort of vine', and so on. Many languages include the appropriate generic noun in each noun phrase, together with a specific noun. In Yidiny, for instance, felicitous sentences can be translated (showing generic nouns in italics): 'The *bird* crane stood on the *ground* sand', 'The *person woman* girl picked up some *stone* slate', and so on. There are in fact two types of generic noun: (i) classifying specific nouns according to the inherent nature of their referents – *jugi* 'tree', *munyimunyi* 'ant' and those just exemplified; (ii) classifying specific nouns according to the function or use of their referents – thus Yidiny includes *bana* 'any drinkable liquid', *mayi* 'any edible plant', *gugu* 'any purposeful noise' and *wirra* 'any moveable object (which is not covered by other generics of type (ii))'. The use of these generic nouns is somewhat reminiscent of classifier systems found in many languages of South-East Asia and Central America, although the latter typically occur only after numerals (and there can be up to 200 distinct classifiers); a generic noun can, in most Australian languages, occur in any type of noun phrase (and the generics may be no more than a score or two in number). In a few languages this syntactic pattern of generic-noun-plus-specific-noun has developed into a series of gender classes, the original generic nouns having reduced to prefixes or suffixes on specific nouns; in some languages this has produced an extensive concordal system, similar to those found in Bantu languages (see 9.2.1).

One pervasive characteristic of Australian vocabularies is the use of a single lexeme to refer both to some cultural object and also to the natural source from which it is obtained. Thus the commonly occurring noun *minya* means 'meat' but is also a generic classifier applying to any edible animal; in Yidiny one would refer to a brown possum as *minya gajaar*, a turtle as *minya bajiigal*, and so on. Paralleling this, *mayi* refers to 'fruit/vegetable food'; and any tree or vine with edible parts can also be described as *mayi*. The same specific name will be given to a nut or fruit and to the tree which bears it (just as in English – *apple* and *apple tree*); by the same principle, a tree from which some implement is made can be called by the name of that implement. In Dyirbal, for instance, bark water-carriers are called *nuba* and the tree from which they are generally made is also *nuba*. Some – but by no means all – Australian languages take the principle of having a single term to describe some natural object, and also something that can be made from it, to the extreme of having a single lexeme covering both 'tree, wood' and 'fire' (this is so for *wagun* in Warrgamay, for example – table 5.1).

A similar semantic principle applies to verbs. A single lexeme is used to describe both an activity that could potentially have a certain result, and one that actually has that result. Frequently, no distinction is made between 'look (for)' and 'see', both being covered by a single verb; similarly with 'listen (for)' and 'hear'. The English verbs 'lie down' and 'sleep' are usually translated by the same verb; for further specification an adjective like 'awake' or 'asleep' has to be brought in. Similarly, the verb offered as Dyirbal translation of English 'kill' is *balga-l* whose literal meaning is 'hit with a long rigid implement, held in the hand'; this translation equivalence has become established amongst bilingual speakers since this action is likely to kill someone, and because the most common method of killing someone is by clubbing them with a heavy stick. It is, of course, possible to hit someone in this way and not to kill, or to kill by some other means; an exact specification would have to involve the adjective *guyi* 'dead', from which can in fact be derived a verbal stem *guyima-l* 'make dead' (see also the discussion of *baygu-l*, 5.2.4).

It is important to note that although Australian languages do not as a rule distinguish lexically between an activity that POTENTIALLY COULD and one that ACTUALLY DOES have a certain result, they often have grammatical – rather than lexical – means for marking this semantic difference.

5.2.1 *Areas of semantic specialisation*

As would be expected, Australian languages have a rich vocabulary for describing culturally important objects. Just as the

Eskimo have a well-developed terminology for referring to different types of snow, so Australians typically have terms referring to different kinds of sand, but perhaps no unspecified lexeme corresponding to the English word *sand*. There are often many terms for referring to parts of emus and eels, among other animals; and there may be specific terms for each of the four or five stages of chrysalis that are recognised to intervene between grub and beetle.

Tribes on the well-watered east coast may have several names for different types of lightning. Nyawaygi is unusual in possessing two different words for 'sun' and two for 'moon' – *bujira* is 'sun low in the sky' in the morning and evening, whereas *jula* is 'hot sun', when overhead; *ŋilgan* is used to refer to a 'full moon' and *balanu* for 'new moon'. In most Australian languages there is just one term for 'sun' and one for 'moon' (they are never subsumed under one term, as happens in some parts of the world). The sun is invariably represented as a female – a dreamtime woman – with the moon sometimes being her husband. There is a rich set of names for stars and other celestial phenomena; dreamtime people and animals are associated with the various constellations, their activities being held responsible for the different seasons of the year.

Some Australian languages have a fuller set of lexemes for describing parts of the human body than do most other languages (including the familiar tongues of Europe). As elsewhere in the vocabulary, there is careful deployment of lexemes so that all important body parts can be named easily without there being any lexical redundancy. Thus femur, the single bone in the upper leg, is described simply and unambiguously in Dyirbal as *jarra+ŋunu wurrmburr* 'bone from the thigh'; but there are two bones in the lower leg and to prevent confusion they each have a name in Dyirbal – *dujul* 'tibia' and *jijal* 'fibula' (these are quite different in form from the noun *waga* referring to 'lower leg'). *Jijal* is in fact used both for fibula, the smaller bone at the back of the lower leg, and also for ulna, the smaller bone at the back of the lower arm. Other Dyirbal names for specific bones include *giruman* 'radius' (the larger bone at the front of the lower arm), *dandal* 'clavicle', *giyany* 'patella', among others. These names are known to everyone in the community; compare with English where the names we have quoted are regarded as technical medical terms – the man-in-the-street has 'collar bone' and 'knee cap' for clavicle and patella but for fibula and ulna there is not even a compound lexeme available. Other types of anatomical terminology in

Dyirbal are as rich as the names for bones – to quote one further set of examples, *ŋawun* refers to the pectoralis major muscle (in the chest), *waju* is the trapezius muscle (over the shoulder blade) and *wangun* covers the gluteus medius and maximus muscles (at the back of the thigh). There are also general terms for anatomical phenomena that recur in different parts of the body: in one Dyirbal dialect *rudu* is used for both 'uvula' and 'clitoris' – it seems to be a general term for referring to any flesh tag of a certain sort.

In contrast to these highly specific anatomical terms, some of the most important lexemes in an Australian language can have a very wide range of meaning. For instance, the Dyirbal noun *mija* is glossed by bilingual informants as 'camp' or 'hut'. Its full range of meaning is (i) any hut or shelter e.g. 'I'll build a *mija*', 'look inside the *mija*'; (ii) the place where any number of people are camped and have erected temporary or semi-permanent shelters e.g. 'they settled down at that *mija*'; (iii) the group of people camped at a particular place e.g. 'the earthquake swallowed all the *mija* (i.e. the people camped there)'; 'share the eel around the *mija*'; (iv) any past or potential camping site e.g. 'have a look around for a flat *mija*'; (v) any place, of any nature e.g. 'you remember that *mija*', 'who owns that *mija*?'; (vi) any tract of country e.g. 'all the King Ranch *mija* has been desecrated'; (vii) the world, as in 'God made the world'; (viii) the lair of any animal etc. e.g. 'hornets make their *mija* in a hollow log'; 'spider's *mija*' was used when the word for 'web' was temporarily forgotten. Note that when *mija* refers to a place it includes all the earth underneath it and also the sky above e.g. 'the *mija* turned red'. Many other Australian languages have a lexeme with a similar range of meaning to Dyirbal *mija*.

One lexical area in which Australian languages excel concerns names for types of noise. For instance, I was able easily to record around three dozen lexemes in Yidiny referring to kinds of noise, including *dalmba* 'sound of cutting', *mida* 'the noise of a person clicking his tongue against the roof of his mouth, or the noise of an eel hitting the water', *maral* 'the noise of hands being clapped together', *nyurrugu* 'the noise of talking heard a long way off when the words cannot quite be made out', *yuyuruŋgul* 'the noise of a snake sliding through the grass', *gaŋga* 'the noise of some person approachng e.g. the sound of his feet on leaves or through the grass, or even the sound of a walking stick being dragged along the ground'. All of these excepting the last two – *yuyuruŋgul* and *gaŋga* – fall within the scope of the generic noun *gugu* 'any purposeful noise'.

Aboriginal Australians are excellent mimics; they have institutionalised imitations of the calls of scores of birds, insects, frogs and other animals (much as we say *twit-twoo* or *miaow*, only on a totally different scale). Each imitation involves the regular sounds of the local language, but with special intonation, breathiness, voice quality and other paralinguistic features. It is common to find a grammatical process for forming, from nouns describing noises or from institutionalised animal imitations, verbs that describe the making of that noise (these are called delocutive verbs). In Dyirbal, for instance, *jiwunyu* 'pink-chested kingfisher' is said to call out [jíu-jíu-jíu-jíu], a repetition of shrill, very breathy monosyllables; the verb to describe this crying out is *jiwu+mba-y*, which involves the delocutive verbalising suffix *+mba-y* added to the institutionalised call imitation *jiwu* (the verb itself is pronounced without any paralinguistic peculiarities). To take another example, *guda* 'dog' is said to go [báwu-báwu-báwu] and the verb 'to bark' is *bawu+mba-y*. (Note that some bird and animal names are, like *jiwunyu*, onomatopoeic, but many others are not.)

There are verbs which distinguish culturally important actions – for instance, one verb will refer to 'spearing' in cases where the spear is aided into its trajectory by means of a woomera, another when it is held in the hand and the actor can see what he is aiming at, another when the spearer makes fairly random jabs in, say, thick grass in which he has seen a movement (none of these verb roots will be related in any way to the noun 'spear', unlike the situation in English). Most Australian languages have a rich selection of lexemes referring to types of giving (according to the social obligation which is being fulfilled), and of attention – Dyirbal has, for instance, the general verb *bura-l* 'see, look at' and also *waba-l* 'look up at', *barrmi-l* 'look back at', *walgi-y* 'look over or round something at', *ruygi-y* 'look in at', *ruga-l* 'look at something going past', *wami-l* 'look sneakily at, spy on', *ŋarnyja-y* 'stare at', and half-a-dozen more. There are also, of course, verbs referring to intellectual activity, and to emotional states. Consider, for instance, *jugarrba-n* in Yidiny. This verb can be used to describe someone whose mind is overexcited and racing, with the result that he cannot focus his attention properly on one topic and is unable to think things out clearly; it also describes someone who cannot get to sleep at night because his mind is restless and won't relax (most frequently, in these circumstances, it focusses with unrelenting clarity on one problem). The Yidiny verb has no equivalent in English – although all speakers of

English should recognise the symptoms, and indeed feel the lack of an appropriate lexeme to describe them – it can only be glossed, not too satisfactorily, as something like 'have unsettled mind'.

Australian vocabularies are well endowed with adjectives. Besides a full set of lexemes for referring to physical properties – size, heat, condition and many more parameters – there is in addition a plurality of adjectives for referring to mental abilities, attitudes and emotions. In Yidiny, for instance, we find *galman* 'competent and experienced at a certain task', *jagujagu* 'imagining oneself able to do some task when in fact one cannot', *milba* 'skilful and clever (at hunting)', *wubuul* 'lucky (in hunting)', and so on.

In keeping with their highly developed sense of social responsibility, Aboriginal Australians have a wide spectrum of adjectives referring to 'pity', 'sorrow', 'being offended (at being socially ignored)', 'justifiably angry (after being wronged by another)', 'longing for one's own relatives, country or traditions'; as well as for kinds of satisfaction and contentment. The meaning of a term of this sort – in any language – can only be appreciated in terms of an understanding of social life and conventions. To consider just one example: Fred Myers investigated the Pintupi (Western Desert) word *kunta*, which is defined in a Pintupi dictionary as 'shy, respectful' but is most frequently glossed by bilingual speakers in terms of 'shame'. It is in fact used to describe someone's feelings if he is seen to do something that is poor etiquette, ill-mannered or wrong – the timidity felt by young men at a public occasion that is likely to prevent them speaking out in front of older men; the shyness felt by children which makes them shelter behind a parent in the presence of strangers; the awkwardness felt in the presence of strangers or people who are only distant kin which inhibits one from asking them for food or favours; the obligatory respect felt towards tabooed kin which necessitates avoidance of direct contact with them; the embarrassment felt at the use of crude language in inappropriate contexts, or at being observed making love, or at overt discussion of the role of copulation in procreation; and so on. Myers comments that the concept represented by *kunta* 'is most applicable to formal or ceremonious occasions, to the etiquette of confronting elders, to the subject of sexual relations, to meeting of strangers, and to highly structured social relations; and it is far less relevant to relations among intimates'.

The one obvious gap in Australian vocabularies is the lack of any system of numbers. It is usually said that there are only numbers 'one', 'two', 'several' and 'many'; some languages appear also to have 'three' although this is frequently a compound form. Kenneth Hale has suggested that these forms are not numerals in the strict sense but are rather indefinite determiners, like English *a* and *some*. Australian languages typically have a singular/dual/plural system applying to pronouns (see 1.4, 9.3 and chapter 11) and this naturally extends to determiners as well. Aboriginal Australians did have ways of measuring and indicating, say, the number of days until some planned social event, through pointing at different points on the palm of the hand; this is the only example of a type of 'sign language' being employed in place of the lexical resources that languages from other areas would use. No special significance attaches to the absence of numeral systems in Australian languages; it is simply a reflection of the absence of any need for them in traditional culture. Aboriginal Australians have no difficulties in learning to use English numerals; Kenneth Hale has commented that 'the English counting system is almost instantaneously mastered by Warlpiris who enter into situations where the use of money is important (quite independently of formal Western-style education, incidentally)'. Many Australian languages have borrowed English numerals – or devised a set of number words from their own lexical resources – and now use them freely in circumstances where contact with European culture makes this necessary. This is sufficient proof, if proof were needed, that there is nothing in the intellectual endowment of Aboriginal Australians which prevented the development of numeral systems in their languages.

Hale also notes that it is natural to find cultural elaboration reflected in lexical structures. 'Among the Warlpiri, for instance, where the algebra of kinship plays an intellectual role similar to that which mathematics plays in other parts of the world, one finds a flourishing, even vibrant, elaboration of kinship nomenclature which succeeds in enabling knowledgeable Warlpiris to articulate a truly impressive array of principles which inhere in the system as a whole – this elaboration, incidentally, goes far beyond the strictly practical needs of Warlpiri society, thereby revealing its true status as an intellectual field capable of providing considerable satisfaction to those individuals who, as they go through life, become increasingly expert in it.' Mary Laughren has also shown that spatial and directional terms in Warlpiri make up an elaborate geometrical system, with similar intellectual overtones. Again, similar remarks apply to many other Australian tribes.

We do not have space here for more than a few comments on the nature of Australian kinship terminology; our examples will be taken from the Mamu dialect of Dyirbal. One important point is that the term that is appropriately used to refer to a relative depends on at least three factors – the relationship involved, the identity of the speaker, and the identity of the addressee. For instance, if males X and Y have a sister Z they will refer to her as *malŋarra* when speaking between themselves; if their parents talk to X or Y about Z they will use the term *yayin* if she is older than them and *jaman* if she is younger; if X or Y are talking to someone outside the immediate family they will refer to Z by the term *jurrgay*. All of these forms – *malŋarra*, *yayin*, *jaman* and *jurrgay* – can only be glossed as 'sister' in English (perhaps adding 'elder' and 'younger' for *yayin* and *jaman*). These examples do not, of course, exhaust the referential possibilities of the lexemes – *yayin* (or *jaman*) will be used when talking to X about his mother's elder (or younger) sister's daughter, and so on.

In Mamu there are in fact two levels of kinship specification. The general level contains all distinctions necessary for established social roles, and perhaps more besides; there is also a more detailed level of specification known as Nyalal (it is described by informants as being 'more polite') which is used in socially determined contexts. For example, if X is the son of Y and Y the daughter of Z, then Z will be *ŋagi* 'maternal grandfather' to X, and X can also be called *ŋagi* 'daughter's child' of Z. If Y is speaking to Z about X then she can just say *ŋagi*, at the general level of kinship specification; but if she chooses to be more specific she can use the Nyalal term and refer to him as *yindala*. Similarly, *ŋuma* is the general term for 'father' and 'father's brothers'; but at the Nyalal level of politeness *bimu* is used for 'father's elder brother(s)' with *ŋuma* now being restricted to 'father' and 'father's younger brother(s)'.

The important point to note is that there is a highly structured kinship system, with types of relationships to near and distant kin being worked out according to a general algorithm. The anecdotal examples we have given could only properly be appreciated in relation to the complete system of kin terms.

5.2.2 *Metaphorical extensions*

Body-part lexemes in Australian languages have considerable metaphoric extensions, being used to describe parts of trees and artefacts, and also geographical phenomena. In Dyirbal, for instance, *binda* is used for 'shoulder' and also 'waterfall'; *garrgal* for 'upper arm (where it joins the body)' and for 'creek (where it joins a major river)'; *julu* for '(anatomical) rump', 'butt of a tree' and 'spur, sticking out from the bank into a river'; *jarra* for 'thigh' and also 'pocket or clearing in the scrub'; while *buŋgu* 'knee' is also used to refer to 'bend in the river' or 'wave' (see 5.4.2 for comments on *buŋgu* in neighbouring Yidiny). A concrete noun can in fact be extended further, to religious and ritual concepts. Howard Morphy has discussed the Yolŋu noun *l̠ikan* which means, firstly, 'elbow', then 'the branch of a tree joining its trunk' and 'bay between two promontories'; 'in the sacred sphere, as well as referring to clan designs and sacred (restricted) paintings, *l̠ikan* is the word used for the "power" names of the clan's sacred objects shouted out at various stages in the performance of ceremonies . . . *l̠ikan* as it is applied to clan designs carries with it the connotation of connectedness which is associated with its secular usages'. It is rare to find metaphorical extensions in the other direction, with a body part being likened to, say, an implement; there are, however, a few scattered examples of this sort – in Yir-Yoront the compound 'neck' + 'boomerang' describes 'collar bone', whereas in Diyari 'mouth' + 'boomerang' is used for 'jaw bone'.

In every part of Australia the kin lexeme 'mother' is also used to refer to 'queen bee' and to 'thumb/big toe' (in the few languages that have a different lexeme for 'mother' and 'thumb/big toe' it is often the case that the latter is cognate with the form for 'mother' in some neighbouring language); in Dyirbal, *yabu* covers 'mother', 'queen bee', 'thumb/big toe' and also 'large intestine (ascending colon)'. The Western Desert language is unusual in employing 'father' for 'thumb/big toe'. Semantic extensions of lexemes whose primary reference is to animate things can be due to physical resemblance – the common employment of a form 'leech' to refer to 'hymen' because of the association with blood – or to emotional identification – in the Wakoora dialect of Gugu-Yalanji *guli* is used both as a noun 'louse', and as an adjective 'angry, savage, cheeky'. (Although there is some evidence in the last example that the adjectival sense may have been prior.)

Fairly complex activities can be viewed in slightly different ways in two neighbouring communities, and thus described by different verbs. In Yidiny, for instance, the verb *munda-l* 'pull' is used for 'row', focussing on the effect the rower has on the oar; in contrast, Dyirbal employs *baga-l* 'pierce with a pointed implement' for 'row', placing emphasis on the action of the oar on the water. 'Marry' is often a derivational form of the verb 'sit down' – in Dyirbal *nyinay+ma-l* 'marry' is literally 'sit down with' or 'settle down with' (in this language 'sit' is the unmarked term from the universal semantic system {lie, sit, stand} – see 5.2.4).

Australian languages do, of course, have many idiomatic expressions; these vary from language to language and it is difficult to draw any overall generalisations. Also, in view of the strong sense of social propriety, there are many types of euphemism; we will quote just one illustration. Generally, a female child should not use the regular term 'penis'. There are no circumstances in which a girl would refer to the penis of an adult man, but she could want to draw her mother's attention to the penis of her younger brother; the way of doing this in the southern dialects of Dyirbal is for the girl to use *juŋgal*, whose primary reference is 'clitoris', for the small boy's penis, saying perhaps

(1) *midi* *bayimbam* *minya+ŋgu*
small+ABS he+ABS+EMPHATIC SOMETHING+ERG
baja+n *juŋgal*
bite+PRES/PAST 'clitoris'+ABS
'Something bit the small boy on the penis.'

The inclusion of the masculine determiner *bayi* (see 9.2.1) and the adjective *midi* 'small' indicate that in this sentence *juŋgal* refers to a child's penis.

5.2.3 *Compounds*

The extent to which simple roots are linked together to form compound lexemes varies considerably among Australian languages. It is very prevalent among languages on the western side of the Cape York Peninsula, where many compounds would be translated by simple roots in languages from other regions; most of the compounds here – and elsewhere – involve a body part as first member. In Wik-Munkan, for instance, the second element can be a noun – 'hand'+'shell' = 'fingernail' – or an adjective – 'head'+'firm' = 'stubborn', 'throat'+'one' = 'trustworthy', 'throat'+'two' = 'hypocritical', 'throat'+'firm' = 'reliable' – or a verb – 'eye'+'lie' = 'be jealous', 'mouth'+'hold' = 'plead'. It is instructive to compare compounds which involve the verb *ʔaath* 'give' together with different body parts: 'hand' + 'give' = 'help', 'mouth' + 'give' = 'reach', 'throat + 'give' = 'tease', 'ear' + 'give' = 'remind', 'eye' + 'give' = 'show'. In the nearby language Yir-Yoront many bodily activities – for which there is a simple lexeme in, say, Dyirbal – are rendered by compounds: 'nose' + 'stand' = 'sneeze', 'nose' + 'carry' = 'snore', 'teeth' + 'throw' = 'whistle', 'throat' + 'buzz' = 'burp', 'mouth' + 'break' = 'yawn'; 'eye' + 'throw' = 'wait and worry'.

Typically, adjectival stems describing particular types of emotion and intellectual ability may be compounds which involve body-part nouns. In many (perhaps all) Australian tribes the ear is held to be 'the seat of intelligence', with inability to listen carefully or to understand being regarded as a sign of stupidity; the most extreme insults often involve obscene associations between the ear and genitalia. Connected with this belief, there are usually a fair number of compounds involving 'ear'. In Guugu Yimidhirr, for instance, forms based on *milga* 'ear' include *milga +mul* ('ear' + 'without') 'disobedient, stupid, deaf', *milga ŋamba* ('ear unaware') 'careless', *milga bubu* ('ear earth') 'thick-skinned, insensitive', *milga dhundal* ('ear soft/wet') 'sorry, homesick, missing someone', amongst many others. Interestingly, there is an adjective *binaal* 'smart, clever, knowing' in Guugu Yimidhirr; this is plainly cognate with *bina*, which is the lexeme 'ear' in most other languages (cf. table 5.1). Gabi, about 1,000 miles to the south of Guugu Yimidhirr, has some compounds based on *bina* 'ear' – 'ear' + 'dying' = 'forget', 'ear' + 'dull' = 'deaf, mad' – but also builds a number of adjectival compounds on *nula* 'stomach', 'stomach' + 'good' = 'cheerful', 'stomach + 'biting' = 'sorry', and so on.

A feature of many western languages is for there to be a quite small number of unanalysable verb roots, each of which enter into a fair number of compounds; this is discussed further, with some exemplification, in 9.4.3 and 12.2.7. There are also, of course, many other types of compounding which we do not have space to go into here. To give just one further example, a noun can be formed by the juxtaposition of two nominal roots, as with Diyari *kilpa+waldrra* 'year', which is based on *kilpa* 'cold' and *waldrra* 'hot'.

5.2.4 *Semantic structure*

Although all human languages probably operate with the same set of basic semantic primitives – atomic components of meaning that cannot be resolved into or explained in terms of any simpler elements – these are combined together in rather different ways in different languages. It is, of course, important to examine the semantic structuring of each vocabulary. Just a little work has been done so far on investigation of the semantic organisation of Australian languages; we can only summarise some of the main points here.

There are a number of ways of uncovering semantic structure. The taxonomic arrangement of floral and faunal species (as in English – *oak* is a type of *tree*, which is in turn a kind of *plant*) is shown by the generic nouns, and their scope. In Yolŋu, for instance, '*maypal* is a collective term which covers all edible invertebrates except bee larvae. This includes all shellfish (marine, freshwater and land molluscs), chitons and all edible crustaceans. It also includes the edible larvae and pupae of several beetles . . .'. There are over sixty species – each with an individual name – included within the scope of *maypal*. Often the criteria for defining a generic term will vary between neighbouring languages; in Dyirbal *yugu* 'tree' does not include within its scope stinging trees (which can give quite painful rashes) or trees like pandanus that are less than a certain height, whereas the Yidiny noun *jugi* – which is probably cognate with *yugu* (see 6.7) – does include pandanus and stinging trees and in fact appears to be roughly coextensive with the English lexeme *tree*.

In some languages the fact that a certain set of nouns forms a taxonomic grouping can be signalled by the use of particular vocabulary referring only to these things. In Koko-Bera, for example, there is no overt generic for 'tea-tree', but there is a term *peth* 'tea-tree bark' – since it refers only to the bark of most or all Melaleuca species, it shows that these species are considered to be a taxonomic group by speakers of the language. Dyirbal has a dozen or so specific adjectives 'big', each being used only with a limited set of faunal species names. For instance, *milgu* 'big' can modify 'black bream', 'red bream', 'silver bream', 'bony bream', 'mud cod' and 'mullet'; it cannot be used with the names of types of cat-fish (these can only take the general adjective *bulgan* 'big').

An invaluable aid to discovering the semantic organisation of Australian languages is provided by avoidance styles and secret languages, and their relationship to everyday speech. The Lardil Damin style operates just with high-level generic terms, that reveal a more abstract level of taxonomic grouping than the lower-level generics in everyday speech – *Li* is any member of the class of bony fishes, for instance (see 3.4). In some secret languages each word is replaced by its antonym, and here examination of the pairings reveals important features of the basic semantic relations of that language.

We mentioned in 3.3 that the most extreme example of a special vocabulary is the Jalŋuy style of Dyirbal-speaking tribes; not one lexeme is common to everyday (Guwal) and avoidance (Jalŋuy) styles, there being generally a many-to-one relationship between the two vocabularies. In the case of nouns, this reveals details of the zoological and botanical classifications that members of these tribes operate with. The principle of classification of trees is particularly instructive: I was told that *miyabur* 'black oak', *jungan* 'bull oak', *gurray* 'red oak' and *junyjurrjunyjurr* 'pink oak' are all described by *gurruŋun* in Jalŋuy since they have the same sort of grain, and differ only in colour. Four species of fig tree have a single Jalŋuy correspondent because they have the same kind of milky sap; two other trees are grouped because of the extreme hardness of their wood, and so on.

Some Jalŋuy groupings relate together Guwal nouns that describe parts of humans, animals, plants and implements. In Guwal, for instance, there are distinct nouns *guga* 'skin of human or other mammal, bark of tree', *wuyga* 'skin of snake after having been shed', *minyja* 'skin of grub', *ningin* 'shell (of egg, nut or turtle)', *gayu* 'bag made from bark', and *gurrgara* '(metal) billycan'; all of these are translated into Jalŋuy by the single lexeme *dagurr*. There are also a few Jalŋuy correspondences of a metaphorical nature, exploiting physical similarities and mythic connections between quite different objects. *Bayi gagilbarra* is the Jalŋuy equivalent of the Guwal noun *bayi yamani* 'rainbow', and in addition *balan gagilbarra* corresponds to *balan ŋirriwuŋal* 'green pigeon' and *bala gagilbarra* to *bala giwan* 'bloodwood tree'; the colour of the pigeon is said to be like the green in the rainbow, and the bloodwood tree is held to be sacred to the rainbow serpent (the most powerful spirit of this region, as elsewhere in Australia). Note that the three Jalŋuy designations are distinguished by having different gender markings – masculine *bayi*, feminine *balan* and neuter *bala* respectively (see 9.2.1).

Verbs are, semantically, the most highly structured part of the lexicon, and correspondences between Guwal and Jalŋuy lexemes can be most revealing; an example was given in 3.3. We can here comment on just one important semantic contrast, which characterises a number of verbal sets in Dyirbal – that between 'let go of' and 'hold on to'. There are a number of verbs for different kinds of spearing that exploit this –

among other – contrasts, and there is also *balga-l* 'hit with a long rigid implement (e.g. a stick), held in the hand' opposed to *minba-l* 'hit with a long rigid implement, thrown'. Interestingly, there is a single lexeme *bunju-l* 'hit with a long flexible implement (eg. a bramble or strap, or the flat of the hand)' – this type of implement is as a rule always held on to. But there is also a single lexeme *biji-l* 'hit with a rounded object (e.g. a stone, a fist)', which is used whether the implement is held on to or let go of.

The Guwal verb *mada-l* was glossed as 'throw' by bilingual informants and *baygu-l* was given as 'bash' in some instances and 'shake' in others. Closer investigation reveals that *mada-l* is most appropriately described as 'set in motion in a trajectory, leaving go of', while *baygu-l* is 'set in motion in a trajectory, holding on to'. *Mada-l* is used independently of whether or not the object set in motion impacts with any other objects; this does correspond fairly closely to the English lexeme *throw*. In keeping with the tendency of Australian languages to have a single term describing an action that potentially could or actually does have a certain result, *baygu-l* is used for shaking or waving something, whether or not it is hit against anything else. Thus, *baygu-l* will describe someone vigorously shaking his head, or – equally well – someone banging his head against a tree; one of its major uses is to describe a hunter picking a goanna up by its tail and bashing it on a tree or rock to kill or stun it. The Jalŋuy verb *nayŋu-l* covers *mada-l* and also more specific Guwal verbs such as *dabi-l* 'throw solid matter (e.g. nuts or sand) at someone', *jilŋga-l* 'throw or pour water', *bulwa-l* 'expel breath in big gasps'. The Jalŋuy verb *bubama-l* covers *baygu-l* 'shake, wave or bash' and also *jinda-l* 'blaze bark, sharpen pencil etc.' which involves the same general concept 'set in motion in a trajectory, holding on to' but 'less vigorously, with more control exercised'.

One fascinating insight into this semantic system was provided by an argument between a Dyirbal informant and his wife over the correct Jalŋuy correspondent for the Guwal verb *darrbi-l* 'shake something (e.g. crumbs) off a blanket'. One suggested that it should be *bubama-l* since the blanket is held on to, but the other insisted that the correct word was *nayŋu-l* since the crumbs do leave the blanket. Both speakers clearly identified *darrbi-l* with the general concept 'set in motion in a trajectory', but differed in interpretation of the 'hold on to/let go of' criterion – whether it is the motion of the blanket, or of the crumbs, that is the critical factor.

Universal semantic systems such as {lie, sit, stand} are of course relevant to all Australian vocabularies. But there can be some variation as to which is the 'unmarked term' from the system. In most Australian languages 'to sit' – usually *nyii-n*~*nyina-y* – is also used with the general sense 'to stay, to settle down', where no particular posture is indicated; but in Wik-Munkan *wun-* 'to lie' appears to be the unmarked term, that also has the sense 'to stay'.

5.3 Semantic shift

There are of course many examples of the same form occurring in two neighbouring (or, sometimes, distant) languages with two slightly different meanings, but for there to be enough semantic similarity to suggest that the forms may be cognate. For instance, the transitive verb *garrba-l* in Yidiny means 'tread on, stamp on, squash', while the identical root – with corresponding conjugation membership – in Gugu-Yalanji means 'catch, grab, hold'; and the noun *maral* means 'snail-like slug' in Dyirbal but 'the slime on a fish' in Nyawaygi.

The most important question here is 'WHICH was the original meaning, and in WHICH of the two languages has the form undergone a semantic shift?' This question is equally valid and equally relevant whether the occurrence of the same form in the two languages is due to genetic inheritance – retention of the form from a common ancestor language (whether pA or some more recent ancestor of a subgroup of Australian languages) – or to recent interlanguage borrowing. Sometimes, as in the examples of the last paragraph, it is impossible to decide on the directionality of change – either of the meanings in the modern languages could have been the original significance of the form, with the semantic shift having occurred in either direction. But in many cases there are reasons for assigning directionality; we discuss some of these in the next paragraphs. (There is, of course, a third possibility: that the original sense was different from either of the two modern meanings, with semantic shift having taken place in BOTH modern languages. There are often, however, compelling reasons for believing that one of the modern meanings was the original significance of the form.)

We mentioned in 5.2.2 that one of the commonest metaphorical extensions is for a body-part noun to be applied to some part of a plant or to a geographical feature. If a new form replaces the original body-part noun in part of its referential range, it will take over the central meaning, leaving the original form with just (what was) the metaphorical extension. By this sort of change, an original body-part noun can – by metaphorical extension, and replacement in its central meaning – come to refer just to some part of a plant, or of the environment. For instance, *mara* means 'hand' in the Western Desert language, in Gugu-Yalanji (table 5.1) and in many other languages, but 'leaf' in Yidiny and Warrgamay; *wari* is 'mouth' in Yidiny but 'gorge' in Dyirbal. Note that a semantic shift in the other direction – from plant part or geographical feature to body part – is seldom attested (in Australia or elsewhere).

Sometimes the term for a relatively minor body-part noun may be generalised as the name for a more important anatomical feature. It is possible that the original name for the prominent feature may have been tabooed – through formal similarity with the name of a deceased person – and that the lexeme referring to some associated body part was taken over to replace it. For instance, *buyin* is 'eyebrow' in Warrgamay and Dyirbal but 'eye' in Nyawaygi. Note that we are not necessarily suggesting that *buyin* originally meant 'eyebrow' in Nyawaygi, and that the semantic shift was an entirely language-internal affair. It is equally likely that, say, Nyawaygi originally had the same lexeme for 'eye', *gayga*, as its northerly neighbours and thus could not borrow from them a term with exactly the same significance when the form was perhaps proscribed by death taboo; but it did the next best thing, taking over *buyin* 'eyebrow' from Warrgamay and Dyirbal as the new lexeme 'eye'. Although the exact mechanism of shift cannot be pinpointed, the fact that several languages have *buyin* 'eyebrow' but only Nyawaygi has it with the meaning 'eye', and the plausibility of a minor-body-part to major-body-part shift (examples of changes in the opposite direction are much rarer) does give a fairly certain indication of the direction of semantic movement. Another example is *nyiginy* 'fingernail, toenail, claw of bird' in Warrgamay, giving rise to *nyiginy* 'hand' in Nyawaygi; note that the Warrgamay lexeme for 'hand' is *mala* and this is also found in Nyawaygi, with the meaning 'palm of the hand'.

The lexeme 'mother' typically has metaphorical extension to 'breast'; it can be replaced in its central meaning and will then become a simple body-part term. Thus we find *ŋamu* 'mother' in Gugu-Yalanji but *ŋamun* 'breast' in Dyirbal; *bibi* 'mother' in Nyangumarda but *bibi* 'breast' in Gugu-Yalanji.

A lexeme that originally applied to a type of material can be used as the name for an implement made from it – compare *barri* 'stone' in Warrgamay with *barri* 'stone tomahawk' in Dyirbal. Somewhat analogously, a concrete term may take on a more abstract meaning. We find *walŋga* as a simple body-part noun 'bottom of the chest' in Yidiny; in Dyirbal and Warrgamay *walŋga* is 'breath' (*walŋgamu* referring to 'lung' in Dyirbal); in Warungu *walŋga* is an adjective 'eager, fond, wanting' and in Nyawaygi it is also an adjective, this time with the meaning 'thirsty' (Yolŋu *walŋa* 'alive, life' may possibly be a further cognate). An extreme example of this type of movement is the shift of a lexeme to become a fully grammatical word; in 11.4 we mention the transfer of *minya* from being a generic noun 'meat, (edible) animal' to become the non-human indefinite-interrogative form 'something, what' in a number of languages from the east and south-east.

Sometimes the sheer number of languages that have a form with a certain sense, compared with just one or two languages which show a variant meaning, suggests the direction of semantic change (although the genetic subgrouping of the languages must be taken into account when making inferences of this sort). Dyirbal is the only language in which the intransitive verb root *wula-y* means 'vanish from sight'; all its neighbours – and some languages from other areas – have *wula-y* 'die' (it never has this sense in Dyirbal). Thus, even if on a priori grounds the shift 'vanish' > 'die' might seem most plausible, the quantitave evidence suggests a change in the opposite direction. To take another example, there are a number of languages which are like Yuwaalarraay (table 5.1) in having *wiyi* or *wii* 'fire'; Warrgamay is the only example known to me with *wii* 'sun', suggesting a shift 'fire' > 'sun' in this one language.

It is occasionally possible to reconstruct an interrelated series of changes which include a number of semantic shifts. For instance, at an earlier stage of the language Dyirbal probably had the generic term *mayi* 'non-flesh food', like many of its neighbours and other languages from all parts of Australia. This then probably developed into a gender-type suffix *-m* on nominal determiners (9.2.1); the noun *wuju*, which occurs with the meaning 'throat' (glossed by one informant as 'throat where you eat') in neighbouring Yidiny, was apparently taken over as the new generic term 'vegetable food'. Now generics like *mayi* and *wuju* refer not only to edible nuts, berries, roots, ferns etc. but also to honey, and the bees that produce it. When English bees were introduced into the region some languages adopted a loan word (e.g. *yiŋiliman*, from 'English man', *yiŋilibiy*, from 'English bee', in different dialects of Yidiny); Dyirbal simply called them *mayi*, taking over the generic term from Yidiny to describe a new species of this genus.

There are other examples of a generic term in one language or dialect having the same form as a species name in another, but in most cases there is no evidence as to which way the shift went (both directions of change are quite well attested for other language families). Thus, we find *jiijii* 'bird' in Warrgamay corresponding to *jiijii* 'black duck' in Nyawaygi, and *jabu* referring to any fish in the Jirrbal dialect of Dyirbal but having the specific meaning 'black bream' in the Mamu dialect.

There are many other examples of semantic difference where there is no evidence concerning the directionality of change. Sometimes 'mother' in one language can be identical in form to 'father' in another – *yabu* is 'mother' in Dyirbal and Warrgamay but 'father' in Bidyara, for instance. The direction and mechanism of change would be fascinating to uncover, both in this example and in the shift between 'man' and 'person'. Some Australian languages have three distinct lexemes meaning 'person', 'man (restricted to male humans)' and 'woman' – Yidiny for example has *bama*, *waguja* and *bunya* respectively. In others a single term covers both the generic and specifically male senses – like the English lexeme *man* – while another term refers to females. There are a large number of different terms for 'woman' – often, a different form in each dialect of a language – whereas the form for 'man' or 'person, man' may recur over a group of related languages. 'Person' in one language is often cognate with 'person, man' or just with 'man' in another language. Or it may go even further – compare *bama* 'person' in Yidiny with *bama* 'male of human or animal species' in Warrgamay; note that Warrgamay also has *gajin* 'female of human or animal species' as well as two nouns *maal* 'person, man' and *ŋulmburu* 'woman'. And in Margany *bama* means 'brother'.

We can simply list a number of other semantic correspondences, for which there is no specific evidence concerning directionality of shift: (i) *waguny* is 'sea, saltwater' in Warrgamay and 'mangrove' – typically found in coastal swamps – in Nyawaygi; (ii) *gamu* is 'water' in the languages of the Maric subgroup but 'flower, nectar' in Yidiny; (iii) *malan* is 'river, creek' in Warrgamay, 'sand bank (on river)' in Dyirbal, and 'flat rock' (typically found in or by a river) in Yidiny; (iv) *guwal* is 'everyday language style' in Dyirbal but 'name' in Yidiny; (v) *gugu* is 'language' in Gugu-Yalanji but it is a generic noun 'any purposeful noise' in Yidiny (see 5.2, 5.2.1).

Amongst adjectives we get (i) *mulga* 'blunt' in Nyawaygi, 'half-blind' in Warrgamay and 'blind' in Dyirbal; (ii) *mundi* 'hard' in Nyawaygi, but the same form functioning as a number adjective 'quite a few' in the southern dialects of Dyirbal; (iii) *garbu* 'three' in the southern and 'quite a few' in the northern dialects of Dyirbal. Cross-language correspondences between adjective and noun include *yarin* 'slim' in Dyirbal and *yaarin* 'girl' in Nyawaygi.

Typical verbal correspondences include (i) *yilba-l* 'throw' in Gugu-Yalanji but 'lose' in Yidiny; (ii) *munda-l* 'lead' in Dyirbal and 'pull' in Yidiny; (iii) *rubi-l* 'swallow' in Nyawaygi but *rubi-y* 'eat meat' in Dyirbal; (iv) *gunyja-l* 'bite' in Warrgamay and 'drink' in Dyirbal. There are also connections between verbs and adjectives – compare (i) verb *bulba-y* 'fall' in Nyawaygi and adjective *bulba* 'broken-hearted' in Dyirbal; (ii) adjective *muna* 'full up, satiated' in Nyawaygi and verb *muna-y* 'vomit' in Dyirbal.

There are only a few cases in which we can be certain of the direction in shift of meaning for a verb. One instance where we can be fairly sure concerns the evolution of a copula verb in Walmatjari. (Most Australian languages do not have any copula 'to be'; where it does occur it has evolved quite recently.) The verb *ŋuna-* 'to be' in Walmatjari occurs predominantly in sentences that are in tenses other than the present e.g. 'she was ignorant of it', 'were you there at the time?'; it is probably cognate with *ŋu(u)-*∼*ŋuna-*∼*wu-*∼*wuna-* 'to lie down' in other languages (12.2.2). We can suggest that in an earlier stage of the language 'lie' was the unmarked term from the system {lie, sit, stand}, being used for 'to stay, settle' and 'to exist' (5.2.4); it has now moved one step further to become a copula verb 'to be'. Walmatjari has introduced a new verb *yuka-* 'to lie'; its origins are not known with certainty – it could be related to the Walmatjari noun *yuka* 'grass' (on the basis of the semantic connection between lying down and grass), or perhaps to the verb *yuka-* 'to enter, arrive' in the closely related language Warlpiri.

Derivational affixes to nouns can in a few cases be shown to have developed from adjectives; examples are given in 10.4.

5.4 The impact of European contact

When European culture was introduced into Australia, names had to be found for new animals, artefacts and activities. There were several possible ways of achieving this – by borrowing a form from English, by extending the meaning of a word already in the language, or by coining a new compound from existing roots.

5.4.1 *Loan words*

We have already referred to forms that were spread widely through the pidgin-type patois which early settlers used in communication with Aboriginal Australians – *yarraman* 'horse', *jimba, jambak* or *jumbuck* 'sheep' (perhaps originating from the English phrase 'jump up'), *migulu* 'white man' and others were borrowed from this patois into Australian languages (4.1). Loans from Macassan are mentioned in 8.4.

There were also many loans direct from English. The form of an English lexeme would be adapted to the phonological pattern of the Australian language. Since there can only be a single consonant at the beginning of a word in most Australian languages, consonant clusters in English would either have one sound omitted or else a vowel would be inserted to break up the sequence. Thus in Walmatjari we have *tuwa* 'store', *kuul* 'school', *kilayij* 'glass', *turiyit* 'street', and so on. In most languages words cannot end in stop consonants and a final vowel is often added – the form *mijiji* 'white woman' occurs in languages as far apart as Nyangumarda and Dyirbal (it is a loan from English *missus*). Final *t* in English was often rendered by the trilled rhotic *rr* e.g. Walmatjari *pilaŋkirr*, Dyirbal *bilayŋgirr* 'blanket'. Some languages do not allow words of less than two syllables in length, and a vowel has to be added here too – Dyirbal *gawa* 'cow' and *rubu* 'rope'. Most Australian languages do not permit a vowel at the beginning of a word – an initial consonant must be added; this is usually *w* before *u*, *y* before *i* and in some languages *ŋ* before *a* (see 6.8.2).

No examples are known of new sounds being introduced into the phonological systems of Australian languages through loans from English (this may simply relate to the limited time of contact); but sometimes phonemes which had restricted distribution may be found in new structural positions in loans. In many languages, *l* cannot begin a word, except in some recent loans, as *lada* 'ladder', *laymun* 'lemon' in Dyirbal. Other than this, loans exactly conform to the phonological structure that characterises native words. All of *p*, *b*, *v*, *f* are mapped onto the single labial stop, which may be written *b* or *p*, according to the orthography adopted for that language (see 6.4); *s*, *z* and *sh* are generally represented by *j*, sometimes by *th* (/t̪/); and so on.

English loan words are generally taken into the noun/adjective (nominal) class of an Australian language, and then show the same inflectional and derivational possibilities as native nominal roots. Even verbs from English are borrowed as nominal roots, from which verbal stems can be derived by the productive processes of the language – see 12.4.

Loan words do not, of course, always have exactly the same meaning as the English words on which they are modelled. A typical example concerns forms based on *wheelbarrow*. In Ngiyambaa *wilbaar* is used to refer to any non-powered vehicle (e.g. cart, dray or sulky), and in Diyari a train is referred to as *thurru wilparra*, a collocation involving *thurru* 'fire' (literally 'fire vehicle'). The Ngiyambaa loan *badig* 'fence' from English *paddock* shows the term for what is contained being adopted as the name for the container.

Finally, we must note that any loan word, even a semi-assimilated form, may be – just like a native word – tabooed on the death of any person whose name shows formal resemblance to it. When a Tiwi boy called Tipuki died, about 1929, the words *tobacco* and *baccy* were immediately proscribed. In 1977 a Djapu man named Djewiny died and the loan word *dhe* 'tea' was at once tabooed at Yirrkala; another loan word *gopi* 'coffee' had its meaning extended also to cover 'tea' (little coffee is in fact drunk at Yirrkala; if disambiguation is necessary it can be referred to as *gopi yuwalk* 'real coffee').

5.4.2 *Extension of meaning*

Most commonly, an existing word may have its reference extended to cover some class of introduced objects. In Yadhaykenu, for instance, *yumpun* 'club' was also used for rifle, *aypany* 'stone' for money, and *munya* 'saliva' for beer. In Dyirbal *maralu* 'hollow log' is also the name for shirt. Some languages make much use of derivational processes to describe new artefacts – the Nyangumarda suffix *-pinti* 'thing concerned with' is exploited to form such names as

ŋarnka+pinti 'razor'	from *ŋarnka* 'beard'
tjanytja+pinti 'thermometer'	from *tjanytja* 'heat of sun'
katjana+pinti 'chair'	from *katja-* 'to sit'

Verbs can also have their meaning extended – *mada-l* 'throw i.e. put in motion in a trajectory, letting go of' in Dyirbal (see 5.2.4) is also used to mean 'post a letter'. Sometimes, a European-type activity may be described in varying ways in different languages – smoking a pipe is described by means of the verb 'to blow' in Dyirbal and Yidiny, but through 'to bite' in Nyawaygi. Looking at just one further example, 'to write' is rendered by Diyari through the verb *daka-* 'to pierce with a sharp implement, punch, kick, butt' (probably through the intermediate stage 'make dots'); in Dyirbal it is expressed through the verb *baŋga-l* 'paint with the finger'; and in Yidiny through the compound *gijar+gunda-l* 'paint in pattern' which links the noun *gijar* 'mark, line' and verb *gunda-l* 'cut'.

Examination of names for European artefacts can be a clue to the criterial meaning of a word. Consider *buŋgu* in Yidiny: this word refers primarily to knee but it can also be used for the hump in a snake's body as it moves along the ground; its significance is, more accurately, 'that part of a body whose movement is the major factor in propelling the entire body along the ground'. This is verified by the fact that *buŋgu* is used to refer to the wheel of a car or tractor; it is plainly the wheels that propel a vehicle. On one occasion Dick Moses interrupted an afternoon of talk in Yidiny to comment, in English, 'look at that car, it's got a flat knee', this loan translation greatly amusing his friends who were present.

There are many other meaning extensions that throw a clear light on cultural attitudes and fears. In Yidiny *jama* means 'anything dangerous or bad' – poisonous snakes, centipedes, stinging trees, and the like; it is also used to refer to opium and liquor. In Nyawaygi the verb *maguli-* 'to work' appears to be derived from the adjective *magul* 'tired'. The greatest variation is in the word for policeman in different languages. Some, like Dyirbal, just have an English loan *bulijiman* or *buliman*; Yidiny has a simple descriptive name *gijar+ji* 'with stripe(s)'; Kalkatungu uses *ganimay+nyjirr* 'he who ties people up'; Djapu has *d̲apt̲ap*, from the verb 'to clench or grip', referring to the action of handcuffs; and, as A. P. Elkin remarked, 'the Broome district words for policemen tell their own story: in Karadjeri he is called *weder*, fierce, severe-looking; in Yauor, *lendo*, sour, salty; and in Djaru *yawadaro wainowadji*, the chaining horseman'. In Dhurga, from the New South Wales south coast, one of the words for policeman is *juŋga* 'octopus'!

The treatment of loans in the Dyirbal avoidance style is instructive. We may recall that almost every noun, adjective and verb has a different form in the everyday and avoidance styles (3.3, 5.2.4) and that there is generally a many-to-one correspondence between everyday and avoidance lexemes. A number of English loans were taken into the everyday style – *bigi* 'pig', *bulugi* 'cattle', *milgi* 'milk', *juga* 'sugar', *waybala* 'white man', *mijiji* (from *missus*) 'white woman' among others; these forms could not be used in the avoidance style, so that some other names had to be found. What happened was that established avoidance lexemes had their meanings extended to cover the loans – *ginga*, the

Jalŋuy correspondent of everyday lexeme *gumbiyan* 'echidna (= porcupine)' also covers *bigi* (the bristles of a pig are thought similar to the prickles of a porcupine); similarly the Jalŋuy term for 'breast', *ŋunŋun*, covers *bulugi* and *milgi*; 'sand' is used for *juga*; while Jalŋuy nouns *gumirriny* and *muguyŋgun* – the established correspondents of everyday forms *guwuy* 'spirit of a dead man' and *guyŋgun* 'spirit of a dead woman' – are employed for *waybala* and *mijiji* respectively. The first white invaders were, because of their white skins, thought to be the ghosts of deceased ancestors; this belief – now long discarded – is permanently enshrined in the lexical structure of the language.

6

Phonology

[The first part of this chapter attempts to explain some basic principles of phonetics and phonology for non-linguists. Readers with a linguistic background could well skip the next two pages and quickly skim 6.1–6.4.1.]

The languages of Australia are remarkably similar in their phonetics and phonology. Some sounds which are found in languages from most other families are notable by their absence – fricatives and sibilants (*f*, *th*, *s* etc.) occur in just a handful of Australian languages, and can there be shown to have developed out of an original stop (for instance, *b*>*v*). An important feature is that in almost every Australian language there is a nasal consonant corresponding to each stop consonant; thus for the labial stop *b* there is the labial nasal *m*, for *g* there is *ŋ* (the *ng* sound at the end of words like *sing* in English), for *d* there is *n*, corresponding to the palatal stop *j* there is the palatal nasal *ny* (similar to the sound in the middle of English *onion*), and so on.

It is important to distinguish between the phonetics and the phonology of a language. Phonetics describes the actual sounds that are uttered by speakers of the language, without reference to their function; phonology focusses on those phonetic contrasts which serve to distinguish between different words in that language.

Some phonetic differences that mark different words in languages like English do not have this role in most Australian languages. In English the substitution of *b* for *p* – a voiced sound for the corresponding voiceless variety – produces a different word, as *bin/pin* and *nib/nip*; and similarly for *d* and *t*, as in *dip/tip*, and *g* and *k* in *gap/cap*. If a word in an Australian language contains a bilabial stop, it can be articulated with or without the vocal cords vibrating (i.e. as *b* or as *p*) and there will not be any difference in meaning. Thus if one is talking Dyirbal one can say [wabu] or [wapu] and in each case would be understood as uttering the word that means 'scrub'. Similarly, if one wanted to refer to a stone one could say any of [diban], [tiban], [dipan] or [tipan]. We can summarise this by saying that voicing of consonants is NOT SIGNIFICANT (that is, it does not distinguish different words) in most Australian languages, as it does in English. Although voiced and voiceless sounds DO OCCUR – at the phonetic level – in Australian languages, the voicing distinction is said to be PHONOLOGICALLY CONTRASTIVE in English, but non-contrastive in Australian languages.

While voicing is a phonetic feature that is phonologically significant in English but not in most Australian languages, there are a number of features for which the opposite is true. There are two kinds of pronunciation of *r* in different dialects of English – a Scotsman will pronounce a word like *borrow* with a rolled *r* whereas speakers of other varieties employ a smoother, continuant *r* sound. The two varieties of *r* are not phonologically contrastive in English – if you pronounce *borrow* with a rolled *r* or a continuant *r* it will be understood to be the same word in each case (and there are many people who do vary their pronunciation, using a trill in some circumstances and a continuant at other times). But in just about every Australian language the substitution of a continuant *r* for a rolled *r* produces a quite different word. In Dyirbal, for instance, *yara* – with a rolled *r* – means 'fishing line', whereas *yaɹ̣a* – with a continuant *r* – means 'man'. It is of course necessary to use different symbols – here '*r*' and '*ɹ̣*' – in order to distinguish these two words.

In learning an Australian language, a speaker of English has to realise that the phonetic difference between *p* and *b* (and between *t* and *d*; *k* and *g*; etc.) is of no consequence for the meaning of what is being said. We say that /p/ and /b/ are two different 'phonemes' in English because they distinguish different words. But in most Australian languages [p] and [b] are merely alternative pronunciations of a single phoneme. With *r* sounds the situation is reversed: /r/ and /ɹ̣/ are distinct phonemes in Australian languages, whereas in English we have a single phoneme that can be pronounced as [r] or [ɹ̣], depending on dialect area, and other factors. Substituting [p] for [b] in an Australian language will give an alternative pronunciation of the same word; substituting [r] for [ɹ̣] in English has the same effect.

The normal convention is to use slant lines, /. . ./, to enclose symbols for phonemes, the basic units of any phonological description; for many languages the most effective orthography is one that has a separate symbol for each phoneme. Square brackets, [. . .], are used to indicate speech sounds at the phonetic level. Each phoneme in a given language has a number of possible pronunciations, which are termed its allophones. Thus in Dyirbal [p] and [b] are allophones of the bilabial stop phoneme which we write as /b/, whereas in English /p/ and /b/ are contrasting phonemes.

A phoneme will typically be represented by a certain allophone in particular phonetic environments, and by another allophone in other types of environment. In North Yorkshire dialects, for instance, both rolled and continuant *r* pronunciations occur; the rolled allophone is generally used after *t* and *d* (e.g. *true*, *dray*) and the continuant elsewhere. We say that the occurrence of allophones is conditioned; the conditioning factor can be the nature of nearby sounds, the position of the phoneme in the word, or a mixture of these two. In Dyirbal, for instance, the voiced allophone [b] is almost invariably heard between vowels (which are always voiced sounds); at the beginning of a word voiceless [p] is often heard, alternating freely with [b] in this position. That is, [diban], [tiban] are the two commonest pronunciations of 'stone'. [dipan], [tipan] are heard much less often; but they are, unhesitatingly, taken as instances of the same word since any allophone CAN be substituted for another allophone of the same phoneme, without changing the meaning of the word.

6.1 **Structure of words**

Australian languages not only have very similar systems of vowels and consonants, they also conform to a common pattern in the phonological structure of words.

In many Australian languages every word must consist of at least two syllables; each word must begin with a single consonant and can end in a consonant or a vowel. There is just one vowel in each syllable; between any two vowels there must be one, or a sequence of two, consonants. We can summarise this in a formula:

CV(C)CV(C)

where C indicates consonant and V vowel, and parentheses, (...), include an optional element. Examples are *gindan*, *bulbu*, *nudin*, *gilu*.

Many languages conform exactly to this norm. Others diverge in minor ways. The most common addition is for a language to have just a handful (usually less than a score) of monosyllabic words. There is usually some restriction on monosyllables: often they must involve a long vowel and/or there must be a syllable-closing consonant.

There are some languages in which every word ends in a vowel, and others in which all words end in a consonant; these can be shown to be quite recent developments – see 7.2.

A few languages, mostly in the south-east, allow words to begin with consonant clusters such as *gl-*, *bl-*, *gr-*, *br-*; it seems that this is also a recent development, involving the loss of an original unstressed vowel (**gVl- >gl-*) – see 7.2. Clusters of three consonants are permitted between vowels in languages from certain areas e.g. *yalŋgay*; here only one consonant is, as usual, allowed initially and finally, so that the word structure is CV(C)(C)CV(C). Triconsonantal clusters may, in many instances, have come about through the loss of a medial vowel – see 6.6.1.

There are, of course, always words with three, four or more syllables e.g. *bayimbam*, *gubimbulu*. The consonantal possibilities are the same between each pair of successive vowels. But it is worth noting that the great majority of the most common lexical roots in each language are disyllabic.

Some of the 200 distinct languages in Australia do show a few further divergences. In many cases these are due to recent historical changes from the structures summarised here. To mention one example, Mbabaram allows open monosyllables, and words beginning with a nasal-plus-stop cluster e.g. *mba* 'belly' – but this can be shown to have developed from the form *bamba*, by a regular process of sound change. Other examples of recent phonological changes are discussed in chapter 7.

6.2 Stress

In most Australian languages word stress is predictable. Most commonly, primary stress goes onto the first syllable of a word; there is then often secondary stress on the third, fifth etc. syllables, excepting that the final syllable of a word does not usually bear stress. Using ´ for primary and ` for secondary stress we would have *díban*, *yálŋgay*, *báyimbam*, *gúbimbùlu*. There are some variations on this basic pattern, and each does tend to recur in a number of different languages. For instance, if long vowels can occur in non-initial syllables they may bear primary stress – e.g. *gimáal*.

Most Australian languages have a very even and rhythmic sound. There is a definite preference for alternation of stressed and unstressed syllables throughout a word (and, to a lesser extent, through a sentence). This is without doubt largely responsible for the virtual absence of monosyllables. A disyllabic word will have one stressed and one unstressed syllable, a quadrisyllabic form will have a stressed-unstressed-stressed-unstressed pattern, and so on.

In almost every Australian language the placement of stress depends to some extent on the position of morpheme boundaries within a word. A frequent pattern is for each suffix, say, to have its first syllable stressed (unless it is a monosyllabic suffix, occurring word-finally). Thus the Warlpiri root *yaparla* 'father's mother' can take ablative ('from') inflection *-ngurlu*, yielding *yáparla+ngùrlu*; and the Warlpiri root *yapa* 'person' can take derivational suffix *-rlangu* 'some, for example' followed by ergative case inflection *-rlu*, yielding *yápa+rlàngu+rlu*. These two words are distinguished solely by different stress placements, determined by the morpheme boundaries.

Adoption of unusual stress patterns must often have been the precursor of extensive phonological change (see chapter 7). Mbabaram probably shifted stress from *bámba* onto the second syllable, *bambá*, before the initial syllable was dropped to give modern *mbá*. Languages like Mbabaram, which have undergone recent changes producing many monosyllables – some of them ending in stops, which may have glottalic release – tend to have a staccato sound, in marked contrast to the more fluid and rhythmic articulation of sentences in languages that have retained the disyllabic pattern.

6.3 Vowels

One substantial difference between Australian and more familiar European languages lies in the number of vowel phonemes they employ. English, for example, has around twenty vowels – fourteen of them contrast between consonants *b* and *t* in most British, American and Australian pronunciations of *beet*, *bit*, *bet*, *bat*, *bart*, *bot*, *bought*, *boot*, *but*, *bert*, *bait*, *boat*, *bite* and *bout*. (Our alphabet is only able to cope with this extensive set of vowels through using, in most cases, a combination of two letters to represent a single vowel sound.)

Most Australian languages have just three vowel phonemes. The international phonetic characters used to represent them are:

/i/	the front part of the tongue raised towards the hard palate; lips unrounded. The major allophone is usually [i], close to the vowel in English *beet* and *feed*.
/u/	the back part of the tongue raised towards the soft palate; lips may be rounded a little. The major allophone is usually [u],

similar to the vowel in English *boot* and *loom*. (The usual slight rounding of the lips is closest to Australian English pronunciation of words like *boot* and *loom*; British and American English tend to have rather more rounding.)

/a/ the tongue lies in the bottom of the mouth, with the jaws open. The major allophone, is, in some languages, [æ], similar to the vowel in southern British *bat, man*, and in other languages [ɑ], similar to the vowel in *father, half*.

In English there is relatively little variation in the articulation of each vowel phoneme (within a single accent). Care must be taken to distinguish [ɪ] in *bit* from [i] in *beet* or [ɛ] in *bet*, so that the intended word is understood. With only three contrasting vowels, Australian languages can afford to allow each a wider range of phonetic realisation.

/i/ is most frequently pronounced as [i] but can also have the articulation [ɪ] – as in English *bit* – or [e] – the first element in the diphthong from *bait* – depending partly on the consonants occurring next to it; that is, a single vowel phoneme in an Australian language can cover the phonetic area of at least three contrastive vowels in English. Similarly, /u/ can range over at least [u], in *boot* and [ʊ], in *put*, depending on the phonetic environment. And the open vowel /a/ also has a fair phonetic range – from [æ] in *bat*, to [ɑ] in *half*, [ʌ] in *put*, sometimes extending to [ɛ] as in *bet* and [ɔ] as in *bought*.

The articulation of the occurrence of a vowel in a particular word is often affected by the phonetic value of the consonants flanking it. Thus /a/ is often pronounced as [ɛ] next to the semi-vowel *y*; in this environment /i/ would be likely to have the allophone [i] – each vowel has a tongue position as close to that of [y] as is possible within its phonetic range. /i/ may be pronounced as [e] in a more neutral environment – say, after *b*; but in this context /a/ is likely always to have its more open allophone [æ]. It will be seen that although the range of phonetic realisations of /a/ may approach that of /i/ (and also that of /u/) this is never likely to lead to confusion. In any given phonetic environment /i/ will always have a less open articulation than /a/ – [i] versus [ɛ] next to *y*, and [e] versus [æ] after *b*.

In Australian languages vowels invariably have a 'pure' articulation, without any diphthongal slurring from one tongue position to another. Half of the vowels in many varieties of English are always articulated as diphthongs – for instance [æʊ] in *bout*, which begins with the vowel quality of *bat* and finishes with that of *put*. (But note that, at the phonological level, [æɷ] can be taken to function as a single phoneme, contrasting with [i], [ɪ], and so on.) Even vowels which in English usually have a 'pure' quality can be pronounced, quite acceptably, as diphthongs – the vowel in *fool* is articulated sometimes as [u] but other times as [ɷu]. Australian vowels do not usually involve any slurring or diphthongisation. They are also seldom centralised – unlike English vowels which can often be reduced to [ə] (the first vowel sound in *about*) in unstressed syllables.

The most important point for the native speaker of English to bear in mind when pronouncing Australian languages is not to diphthongise vowels, or to reduce them, as in English. A word like /bina/ should be pronounced [bína] with a clear pure '*ee*' quality to the [i] and as careful an articulation of [a] as if it occurred in a stressed syllable. Most phonetically untrained speakers of English tend to say [bə́inə] when trying to pronounce this word; attention to vowel quality is a simple matter, but a most important one.

Over most of Australia a three-vowel system is the norm. However, most languages in the Kimberleys and Arnhem Land have instead a five-vowel system /i/, /ɛ/, /a/, /ɔ/, /u/; these are the languages which have shown most innovations – morphological and phonological changes – in the development from proto-Australian. It seems most likely that pA did have only three vowels. But this is the one aspect of pA phonology about which we can be least certain; intensive comparative work will be required to provide support for this hypothesis, and indicate the ways in which northern five-vowel systems developed (or, if this support cannot be found, to look for evidence in support of other hypotheses).

In other parts of the continent, systems of more than three vowels are encountered, but can be shown to have developed out of three-vowel systems by regular and quite recent processes of phonological change. Some examples are mentioned in 7.1.2, including Anguthimri, from the northern Cape York Peninsula, which had at least sixteen and possibly seventeen contrasting vowel phonemes.

At the opposite extreme, it seems that only two vowel phonemes need to be recognised for Arandic languages, such as Kaititj, from Central Australia. Oversimplifying somewhat, the high vowel /ə/ can be realised as [u] after [w], as [i] word initially or before [y] and as [ə] in other environments; there is also a low vowel /a/.

About half the languages of the Australian continent have a distinction between long and short vowels; thus – doubling the vowel symbol to indicate length – there is effectively a six-term system /i/, /ii/, /u/, /uu/, /a/ and /aa/. There are almost always distributional restrictions on long vowels – they may not occur in successive syllables, or only one long vowel may be permitted per word. In many languages long vowels occur only in the initial syllable of a word (note that this is the syllable which bears primary stress). Six vowels are in contrast in initial syllables, but only three at later positions in a word; examples are *giiba*, *baadi*, *juura*, *waaŋal*.

Comparison of cognates in widely dispersed languages indicates that pA did have long vowels in the initial syllable of a word; there is no evidence that it allowed a length contrast at other positions. Some modern languages with long vowels simply retain the pA contrast. But, over large areas of the continent, distinctive length was simply dropped – *gaa-ŋ* 'to carry' and *waaŋal* 'boomerang' became *ga-ŋ* and *waŋal*, and so on. Some modern languages have, through phonological changes, developed a contrast between long and short vowels in quite recent times; examples are given in 7.3. It is interesting that these newly developed long vowels can occur only in initial syllables in Warlpiri, only in non-initial syllables in Yidiny, but in any and every syllable in Ngajan, so diverse are the mechanisms of change involved.

6.4 **Consonants**

6.4.1 *Places of articulation*

Although they generally have no fricatives or sibilants, Australian languages do show a fair number of consonantal distinctions. Some of these are rather different from the distinctions found in the more familiar Western European languages.

Two languages may have almost identical speech sounds, at the phonetic level, but may group them together as phonemes, at the phonological level, in quite different ways. Thus in English and in Guugu Yimidhirr (spoken near Cooktown in North Queensland) we find voiced and voiceless stop sounds made with the tongue touching the teeth (shown by placing the diacritic ̪ below the letter) and with the tongue touching the alveolar or gum ridge behind the teeth (shown by ̩). Thus

	tongue touching teeth	tongue touching alveolar ridge
voiced stop	d̪	d̩
voiceless sound	t̪	t̩

Speakers of English may sometimes say [d̡] and at other times [d̪], in words like *den*, *loved*, and so on. The use of one or the other of these two sounds varies from dialect to dialect and sometimes from speaker to speaker, depending partly on the phonetic value of nearby sounds and partly on chance – where the tongue happens to be put within the range of permissible pronunciations for the phoneme /d/. But while speakers of English are usually unaware of the difference between [d̡] and [d̪] (and between [t̡] and [t̪]) – simply because this never serves to distinguish between different words in the language – they take great care to distinguish between [d̡]/[d̪] on the one hand and [t̡]/[t] on the other. Substituting [d̪] for [d̡] in [d̪en] produces an alternative, acceptable pronunciation of the same word, *den*. But substituting [t̡] for [d̡] yields the quite different item [t̡en], *ten*.

But suppose that a speaker of Guugu Yimidhirr were teaching you that language by getting you to say words after him, making sure that you pronounced them accurately, according to the requirements of Guugu Yimidhirr phonology. If you repeated [d̡agu] 'thing, tool, implement' as [t̡agu] he would be unlikely to correct you, since [d̡] and [t̡] are allophones of a single phoneme in Guugu Yimidhirr, just as [d̡] and [d̪] are allophones of /d/ in English; [t̡agu] would be understood as the same word as [d̡agu]. If, however, you pronounced [d̡agu] as [d̪agu] you would certainly be corrected. [d̪agu] is a quite different word, meaning 'left hand'. A speaker of Guugu Yimidhirr is as particular about the [d̡]/[d̪] difference as a speaker of English is concerning the [d̡]/[t̡] difference. And just as English speakers are unaware of the [d̡]/[d̪] difference, so speakers of Guugu Yimidhirr are oblivious to the [d̡]/[t̡] distinction. A speaker is likely only to 'hear' those differences which can distinguish between different words in his language.

Looking just at the speech sounds in English and Guugu Yimidhirr we find in each case a distinction between voiced and voiceless stops and between dental and alveolar articulation. The voice distinction is phonologically significant in English and serves to distinguish distinct words, whereas the dental/alveolar distinction is of no consequence at all to the functioning of the language. In Guugu Yimidhirr the opposite holds – the dental/alveolar distinction is phonologically significant and distinguishes different words, whereas voicing does not play any role in the communicative working of the language.

We can summarise diagrammatically (figure 1) the way in which these sounds are grouped as allophones of the significant phonemes in each language. It will be noted that although we choose the label /d/ for a phoneme in English and also for a phoneme in Guugu Yimidhirr, these are not identical. [d̪] will be an allophone of /d/ in English but not in Guugu Yimidhirr, and [t̩] will be an allophone of /d/ in Guugu Yimidhirr but not in English. The important point here is that the phonological value and phonetic realisation of any phoneme is only understandable WITH RESPECT TO THE COMPLETE PHONOLOGICAL SYSTEM of that language – the other phonemes, the phonetic features that serve to distinguish them, and so on.

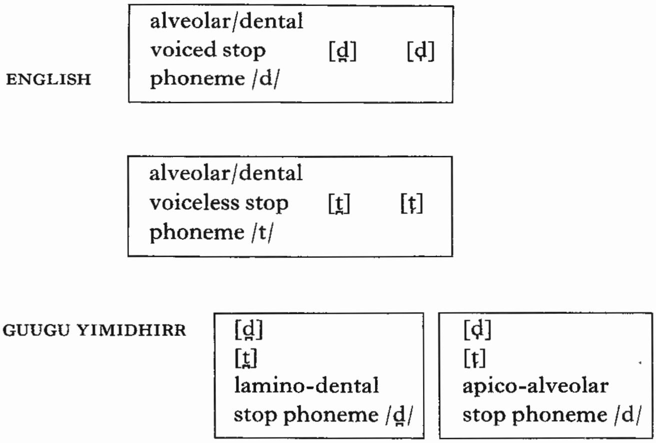


Figure 1

English has just three contrastive places of articulation for stops – *p* and *b*, involving closure of the lips; *t* and *d*, involving closure of the front part of the tongue with the alveolar ridge or teeth; and *k* and *g*, involving closure of the back part of the tongue with the soft palate or velum. It also has three contrasting nasals – labial *m*, alveolar/dental *n*, and dorso-velar *ŋ*; but in English *ŋ* has a very limited distribution – it occurs at the ends of syllables (e.g. *sing*, *singing*) and before *g* and *k* (e.g. *finger*) but it is never found at the beginning of a word, and only very seldom between vowels in a root.

A common pattern in Australian languages is for there to be no less than six contrasting places of articulation for stops and also for nasals.

That is, using International Phonetic Association symbols:

	apico-alveolar	apico-postalveolar (retroflex)	lamino-interdental	lamino-palatal	dorso-velar	bilabial
stop	/d/	/ɖ/	/d̪/	/ɟ/	/g/	/b/
nasal	/n/	/ɳ/	/n̪/	/ɲ/	/ŋ/	/m/

Each stop/nasal involves the movement of an active articulator into contact with a passive articulator. The active articulator can be the tip of the tongue ('apical' sounds), the blade of the tongue ('laminal' sounds), the back or dorsum of the tongue, or the lower lip. We shall later see that there is a strong connection between the two apical sounds and between the two laminal sounds; it is most useful, in describing Australian languages, first to specify the active articulator, and then to distinguish between apical, and between laminal, sounds in terms of differences of passive articulator.

Apical sounds involve just the tip of the tongue touching the roof of the mouth. With an apico-alveolar the tongue tip is brought up to touch the front of the alveolar ridge, whereas with an apico-postalveolar the tip is bent back to touch the back of the ridge. These articulations are illustrated in figures 2 and 3.

Apico-alveolars are similar to /d/ and /n/ in English – although in English either the tip or the blade of the tongue can be placed against the alveolar ridge or the teeth; Australian languages normally make a clear distinction between 'tip' and 'blade' sounds, and between 'alveolar' and 'dental' articulation. Apico-postalveolars occur in the languages of India and in some American pronunciations of English (the sounds in the middle of *border*, *warning*); they are often called 'retroflex', describing the shape of the tongue as it is turned back to reach the anterior part of the alveolar ridge.

Laminal sounds involve a fair area of the blade (the front section of the top) of the tongue. With lamino-interdentals this generally makes contact with both teeth – which are usually slightly apart – the tip of the tongue being somewhere in the region of the lower teeth ridge. (In some Australian languages the blade of the tongue only touches the top teeth, giving lamino-dentals rather than lamino-interdentals.) For lamino-palatals (sometimes called lamino-alveopalatals or just lamino-alveolars) the blade of the tongue touches the hard palate, or the alveolar ridge, or

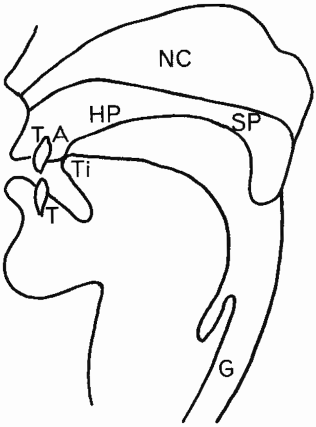


Figure 2. The tip of the tongue (Ti) touching the alveolar ridge (A) in making an apico-alveolar stop [d]

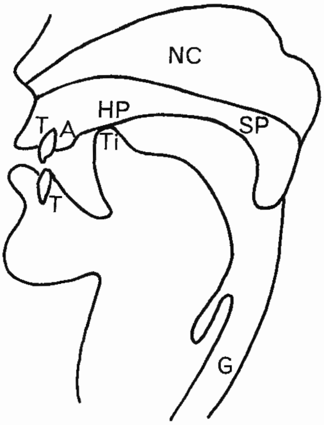


Figure 3. The tip of the tongue (Ti) folded back into a retroflex position and touching behind the alveolar ridge for an apico-postalveolar stop [ḍ] or [rd]

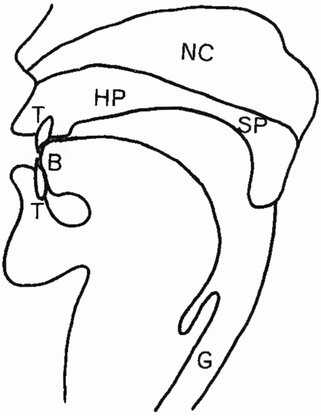


Figure 4. The blade of the tongue (B) touching both teeth (T) for a lamino-interdental stop [d̪] or [dh]

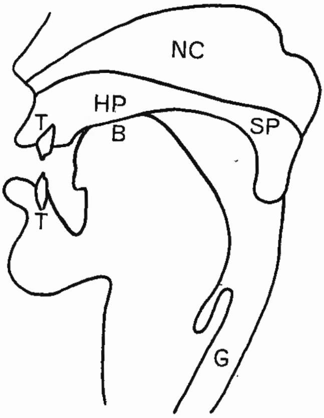


Figure 5. The blade of the tongue (B) touching the hard palate (HP) for a lamino-palatal stop [ɟ], [d̡] or [j]

Note. The soft palate (SP) is raised, cutting off the nasal cavity (NC) for these four sounds. With the soft palate lowered, nasals – corresponding to each of these four places of articulation – are produced. (G glottis.)

often both, with the tongue tip usually touching the teeth. These articulations are illustrated in figures 4 and 5.

Making a lamino-palatal stop is rather like pronouncing *d* and *y* simultaneously. The lamino-palatal nasal is like superimposed *n* and *y* – it is in fact similar to Spanish *ñ*. Interdentals are unlike any sound in English (although they can have a minor fricative allophone in some languages which is like English *th*) – it does no harm to practise them in a slightly exaggerated way, sticking the tongue between the teeth, and then trying to say *d* and *n* (this is the way they are pronounced e.g. by some Yolŋu speakers).

The other two stops have the same articulation as in languages outside the Australian continent. Bilabials /b/ and /m/ involve closure of the lips; dorso-velars /g/ and /ŋ/ involve an area at the back of the tongue touching the soft palate. The dorso-velar nasal /ŋ/ occurs in English, but not at the beginnings of words, so that native speakers of English often have difficulty pronouncing words that commence with /ŋ/, which include pronouns and many important grammatical and lexical words in Australian languages. A good way of learning how to say *ŋinu* 'your' (in Warrgamay) is to tack *-inu* onto *bang*, /baŋ/, and on repetition gradually omit the *ba* – thus *baŋinu*, *baŋinu*, *baŋinu*, *ŋinu*, *ŋinu*.

With stop (sometimes called 'plosive') consonants there is a complete closure of the air passage at some point in the mouth; the air compressed behind this stoppage rushes out with a slight explosion when the closure is released. Nasals involve the same mouth closure as stops but at the same time the soft palate is lowered, allowing air to escape through the nose. Although of course there can be as many nasals as stops, languages from most parts of the world have more stop than nasal phonemes. A notable feature of Australian languages is that very nearly all of them have a nasal corresponding to each stop.

As we have already mentioned, stops in Australian languages have both voiced and voiceless allophones – typically, voiceless allophones may occur word-initially and voiced allophones word-medially, between vowels or other voiced sounds (stops are not normally encountered word-finally). Since voicing is not phonologically significant either *b*, *d*, *g* or *p*, *t*, *k* could be used to write these sounds – it does not matter which series is employed so long as a choice IS MADE and IS CONSISTENTLY MAINTAINED. (To use *p* sometimes and *b* other times would be unnecessary and misleading – like insisting that we use both *d̩* and *d̥* in the orthography of English!) For some languages, particularly those in the west, *p*, *t*, *k* are generally used, simply because the voiceless allophones predominate; for a rather larger number of languages *b*, *d*, *g* are employed, since the major allophones are voiced. A great deal of argument has gone on concerning whether *p*, *t*, *k* or *b*, *d*, *g* are most appropriate (at one time there was something in the nature of a feud, triggered by this issue, between the 'voiceless symbol' Adelaide school and the 'voiced symbol' Sydney school).

In this book we have tried to standardise and use the voiced symbols, *b*, *d*, *g*. However, voiceless symbols are used where these are employed in an established practical orthography for a living language. The reader will soon get used to the fact that *p*, *t*, *k* in one case are entirely equivalent to *b*, *d*, *g* in another e.g. that Western Desert *pina* 'ear' is identical to Yidiny *bina*. (For the few languages that do have a distinction between two series of stops, both voiced and voiceless symbols are used – 7.4).

There are no letters in the roman alphabet for three of the stops. The recognised phonetic symbols are *ɖ/ʈ* or *ḍ/ṭ* for apico-postalveolar (retroflex), *d̪/t̪* for lamino-interdental and *ɟ/c* or *d̡/ƫ* for lamino–palatal. In order to be able to reproduce Australian languages on a standard typewriter, many people use combinations of English letters for a single Australian phoneme – *rd/rt* instead of *ɖ/ʈ* *dh/th*, for *d̪/t̪* and *j/tj* for *ɟ/c*. We shall follow that convention in the remainder of this book. It must clearly be borne in mind that sometimes two letters are being used for a single sound, much as *sh* is employed in English orthography. (It must also be remembered that we use /j/ to refer to a laminal STOP, not an AFFRICATE as in English orthography.)

Corresponding symbols *rn* (= *ɳ*), *nh* (= *n̪*) also *ny* (= *ɲ*) are used for nasals. We prefer the digraph *ny* over, say, *ñ*, simply because most practical orthographies for Australian languages do use *ny* for the lamino-palatal nasal; it must always be borne in mind that a spelling like Yidiny indicates /yidiɲ/ (and NOT something like [yidinai]). For the dorso-velar nasal, though, we shall use the standard phonetic symbol *ŋ* – this will be the only unusual letter in our orthography for Australian languages (it is an easy matter to get '*ŋ*' added to a typewriter keyboard). To employ the digraph *ng* for *ŋ* would lead to confusion with the consonant sequence *n*+*g* (although if the *p*, *t*, *k* series were used this would be avoided). Note that the digraphs we do employ are unlikely to confuse – there is no /h/ phoneme, and generally /r/ cannot be followed by /d/ or /n/, nor can /n/ be followed by /y/ – see 6.6.

6.4.2 *Stops and nasals*

The normal maximum system of six stops and six nasals can now be set out in terms of our practical orthography:

(1)

	apico-		lamino-		peripheral	
	alveolar	postalveolar	interdental	palatal	dorsal	labial
stop	*d*	*rd*	*dh*	*j*	*g*	*b*
nasal	*n*	*rn*	*nh*	*ny*	*ŋ*	*m*

The dorsals and labials form a 'natural class' – they behave in the same way with respect to distribution in a word, and so on – see 6.6. It is convenient to describe them by the cover-term 'peripheral', which indicates articulation at the extreme back or front of the mouth. The non-peripherals, articulated in the middle of the mouth, are then subdivided into apicals and laminals.

A six-place system of this type is found in many languages – Pitta-Pitta, Kalkatungu and Warluwarra from west Queensland, Arabana from South Australia, Kaititj and Aranda from Central Australia, Anindilyakwa from Groote Eylandt, and Yinyjibarnrdi and Bunaba from Western Australia, among others.

Other languages show deviation from this pattern by having a single apical series, or having a single laminal series, or both. We can thus get a five-place system with two apicals and one laminal:

(2)

	apico-			peripheral	
	alveolar	postalveolar	laminal	dorsal	labial
stop	*d*	*rd*	*j*	*g*	*b*
nasal	*n*	*rn*	*ny*	*ŋ*	*m*

This type of system occurs in many languages from Western Australia – the Western Desert language, Walmatjari; from the Northern Territory – Warlpiri, Alawa, Maung; and from Victoria – Madhi-Madhi, amongst others.

An alternative five-place system involves two laminals and one apical:

(3)

		lamino-		peripheral	
	apical	interdental	palatal	dorsal	labial
stop nasal	*d* *n*	*dh* *nh*	*j* *ny*	*g* *ŋ*	*b* *m*

This occurs in some languages from Queensland – Guugu Yimidhirr, Wik-Munkan, Mbabaram; and from New South Wales – Gamilaraay.

The simplest array shows just one laminal and one apical series:

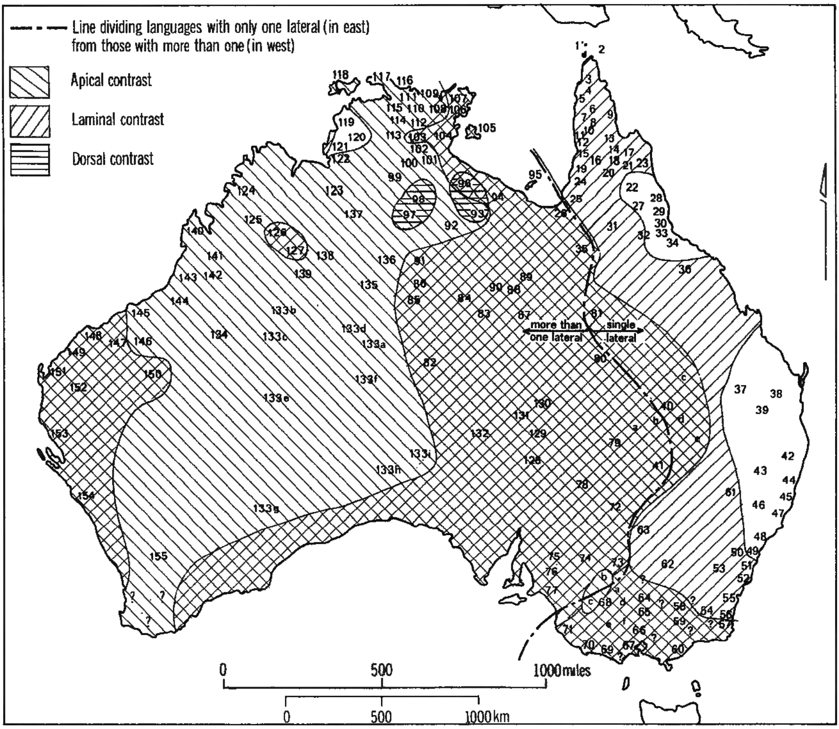
(4)

			peripheral	
	apical	laminal	dorsal	labial
stop nasal	*d* *n*	*j* *ny*	*g* *ŋ*	*b* *m*

It is found in languages from east Queensland – Warrgamay, Dyirbal, Yidiny, Gugu-Yalanji; from eastern New South Wales – Gumbaynggir, Banjalang; and from the Daly River region in the Northern Territory.

These deviations from the maximal six-place system are not randomly distributed. Most of the languages of Queensland lack an apical contrast, as do almost all the languages of New South Wales and possibly some of those in Victoria (some Victorian languages are known only from nineteenth-century written sources and it is difficult to be sure of their phonology). ALL languages in the central and western states – except for a handful in the Daly River area – show a contrast between two apical series. Languages with a laminal contrast are distributed round the west and south-west coasts, in a small area in the central north, and in a block through the middle of the eastern part of the continent.

Map 5 shows where apical and laminal contrasts are found. Systems of type (1) are found in the double-hatched area, (2) and (3) in the single hatched areas, and (4) in the white regions. Details concerning laminal and apical contrasts and the question of whether pA had one or two



Map 5. Distribution of laminal, apical and dorsal contrasts, and of laterals. Key as for map 2

laminal series and one or two apical series are discussed in 6.5.

There is a further contrast, found in just a small area. In 1.1 we mentioned that Yanyuwa has no less than seven oral stops. There are two dorsal series, one made with the back of the tongue touching the soft palate – these dorso-velar phonemes /g/, /ŋ/ are phonetically similar to the single dorsal stop and nasal in other Australian languages – and the other with the back of the tongue touching the hard palate, producing a dorso-palatal stop and nasal (which we can represent in our practical orthography as /gy/ and /ŋy/).

Yanyuwa appears to be unique in showing a phonological contrast between two series of apicals, two laminals and two dorsals. As is normal in Australia, there is a nasal corresponding to each stop. The Yanyuwa system is:

(5)

					peripheral		
	apico-		lamino-		dorso-		labial
	alveolar	postalveolar	interdental	palatal	palatal	velar	
stop	*d*	*rd*	*dh*	*j*	*gy*	*g*	*b*
nasal	*n*	*rn*	*nh*	*ny*	*ŋy*	*ŋ*	*m*

A few of Yanyuwa's neighbours (Garawa, Djingili, Ngarndji) also show a dorsal contrast (the region marked with horizontal shading on map 5), but they lack the laminal contrast, and so have a total of only six stops. Djingili appears to have a dorsal contrast for stops but not for nasals (a rare exception to the nasal-corresponding-to-every-stop pattern which is a characteristic of the Australian family). The Djingili system is:

(6)

				peripheral		
	apico-		laminal	dorso-		labial
	alveolar	postalveolar		palatal	velar	
stop	*d*	*rd*	*j*	*gy*	*g*	*b*
nasal	*n*	*rn*	*ny*		*ŋ*	*m*

It seems fairly certain that the dorso-velar and dorso-palatal phonemes have evolved from a single dorsal series in earlier stages of these languages. Neil Chadwick has suggested that sequences of *-j+g- and *-g+j- across a morpheme boundary have given rise to *gy* in Djingili, for example (but have become just *-j-*, with the *g* having been dropped, in the neighbouring Wambaya).

6.4.3 *Laterals*

Lateral sounds – such as English *l* – involve the mid-part of a cross-section of the tongue touching the roof of the mouth, so that air escapes along the sides of the tongue. A further typological feature of Australian languages is that they can have as many as four laterals; there can be a lateral in each non-peripheral stop/nasal series.

Thus, Pitta-Pitta, which has two apical and two laminal stops and nasals, shows two apical laterals and two laminal laterals:

PITTA-PITTA	*d*	*rd*	*dh*	*j*	*g*	*b*
	n	*rn*	*nh*	*ny*	*ŋ*	*m*
	l	*rl*	*lh*	*ly*		

The articulatory specifications given for stops and nasals apply exactly to laterals. For /rl/ the tip of the tongue is turned back to touch the back of the alveolar ridge – like the sound in the middle of a fairly typical American pronunciation of *Shirley*. For /lh/ the tongue touches both teeth, and for /ly/ it touches the hard palate (something like saying *l* and *y* simultaneously).

If there is only one laminal series for stops and nasals then there can be at most one laminal lateral. Thus:

WESTERN DESERT	*t*	*rt*	*tj*	*k*	*p*
	n	*rn*	*ny*	*ŋ*	*m*
	l	*rl*	*ly*		

There is one major exception to the basic generalisation – languages in the eastern third of the continent (roughly, east of a north-south line drawn through the Gulf of Carpentaria – shown on map 5) have just one lateral, /l/, irrespective of the number of stops and nasals. Thus:

GUUGU YIMIDHIRR	*d*	*dh*	*j*	*g*	*b*
	n	*nh*	*ny*	*ŋ*	*m*
	l				

WARRGAMAY	*d*	*j*	*g*	*b*
	n	*ny*	*ŋ*	*m*
	l			

There are just one or two exceptions – languages east of the line drawn on map 5 which have more than one lateral. It is possible that the second lateral, laminal /ly/, in Nganyaywana (which has in fact undergone extensive phonological changes of other types) evolved recently from a sequence of /l/ plus /y/. There may also be two (or perhaps more) laterals in some languages from the Cape York Peninsula – in Yir-

Yoront and Umbuygamu, for instance; these are also probably the result of recent phonological changes.

West of the Gulf by no means every language has a lateral in EVERY one of the non-peripheral series (this contrasts with the distribution of nasals – there is almost always a nasal in every stop series). Yukulta and languages of the Yolŋu subgroup have six stops and nasals, like Pitta-Pitta, but only two laterals, /l/ and /rl/; Kitja, again showing the maximum six-term stop and nasal series, has just /l/, /rl/ and /ly/. (A further generalisation can be made: a contrast between two laminal laterals is found only if there is also a contrast between two apical laterals; that is, there are no examples of systems of three laterals /l/, /ly/ and /lh/.) In 6.5.3 we mention the changes by which some languages in the Ngayarda subgroup, from Western Australia, have quite recently reduced their lateral inventories.

6.4.4 *Rhotics*

'Rhotic' is a term used to describe what are commonly referred to as *r* sounds (of various kinds), sounds made with the sides of the tongue touching the top of the mouth, allowing air to escape through a groove in the middle of the tongue. Australian languages are unusual in having more than one rhotic phoneme (and in fact the term 'rhotic' was coined, in 1972, for convenience in referring to the variety of *r* sounds in Australian languages).

Almost every Australian language has two rhotic phonemes – a trill or roll /r/ and a continuant /ɹ̣/. For /r/ the tongue is placed near the alveolar ridge, in a fairly relaxed state, and vibrates rapidly as air is blown across it; this is rather like the broad Scots pronunciation of English /r/ or the standard pronunciation of /r/ in Italian. With /ɹ̣/ the air flows continuously over the tongue producing a resonant sound, similar in phonetic type to the semi-vowels /w/ and /y/; in the typical Australian pronunciation of /ɹ̣/ the tip of the tongue is turned back, almost as far as for retroflex /ḍ/, /ṇ/ and /ḷ/ – it is most similar to the r pronunciation, [ɹ̣], of the English West Country dialect.

In terms of our practical orthography we shall use /rr/ for the trill *r* and just /r/ for the continuant *ɹ̣*. These two rhotics, /rr/ and /r/, can be added to the consonant inventories given above for Western Desert, Guugu Yimidhirr and Warrgamay.

Although almost all Australian languages have two rhotic phonemes, their phonetic realisations do differ quite considerably. In Yidiny, from north-east Queensland, /rr/ is an apico-alveolar trill, sometimes reducing to a single tap. The most common pronunciation of /r/ is as an apico-postalveolar grooved continuant; however it can be realised as a postalveolar trill, typically at the end of a stressed syllable. In Yidiny, as in other languages, the most important factor appears to be not manner but PLACE of articulation. /rr/ is always articulated FURTHER FORWARD in the mouth than /r/; then, as a concomitant feature, /rr/ is always or almost always a trill and /r/ is frequently a grooved continuant.

Even languages with a single apical series for stops and nasals (most of those in Queensland and New South Wales) generally have two rhotics. Just three or four languages are known with a single rhotic phoneme – in Banjalang, from north-east New South Wales, the original /r/ and /rr/ have fallen together as a flap /ɾ/, and in Kuuku-Yaʔu, from north-east Queensland, all instances of /r/ have changed into the glottal stop /ʔ/, leaving just /rr/ (it may be significant that both of these languages lie within the single apical area).

A number of Australian languages do have THREE distinct rhotic phonemes. The most common pattern is for there to be an apico-alveolar flap /ɾ/ in addition to the recurring apico-alveolar trill /rr/ and semi-retroflex continuant /r/; this system is shown by Pitta-Pitta, from west Queensland, by a geographical block of languages in South Australia (including Diyari, Arabana and Malyangapa, among others) and by Kurtjar from the Cape York Peninsula. There are other types of rhotic system reported – in addition to /r/ and /rr/, Murinypata has an apico-alveolar continuant /ɹ/, Warlpiri has an apico-postalveolar flap – symbolised by the digraph /rd/ – and Yaygir has a VOICELESS apico-alveolar trill /r̥r̥/.

6.4.5 *Semi-vowels*

The four languages whose consonant inventories we have sketched here each has a three-vowel system, which is typical of Australian languages except for a group in the central and western far north (where a five-vowel system is the norm). Pitta-Pitta has just /a/, /i/ and /u/ whereas Western Desert, Guugu Yimidhirr and Warrgamay also show a contrast between long and short varieties of each vowel. In Western Desert and Warrgamay long vowels may only appear in an initial syllable, whereas in Guugu Yimidhirr they can appear in any syllable of a word.

All Australian languages, including these four, also have two semi-vowels – peripheral /w/ and laminal /y/. For /w/ the back of the tongue is raised towards the soft palate, and the lips are rounded. It thus has characteristics of both the bilabial and the dorso-velar series; we grouped these together as 'peripheral' in 6.4.1 and so can appropriately refer to /w/ just as a peripheral semi-vowel. Similarly, /y/ is phonetically close to laminal sounds; there is no justification for any further specification – as lamino-interdental or lamino-palatal – so that it is most appropriate to refer to /y/ simply as the laminal semi-vowel.

In many (but not all) languages, word-initial /wu-/ or /yi-/ can be pronounced as [wu-], [yi-] or as [u-], [i-]. It is always simplest to take the underlying form as involving a semi-vowel, and then to state the conditions under which this need not be pronounced. To take underlying forms as beginning with /u-/ would involve complex specifications – that initial /wa-/ and /wi-/ are allowable, but not /wu-/, and so forth. In some languages initial [w] or [y] may be dropped only when the next consonant cluster involves a nasal or stop (thus in Dyirbal /wurrbanyu/ can be pronounced as [wurrbanyu] or [urrbanyu] but /wuyuban/ only as [wuyuban], never *[uyuban]).

At the end of a syllable, and particularly word-finally, a vowel-plus-semi-vowel sequence may be pronounced as a phonetic diphthong e.g. /jarray/, [jarrεi]. We emphasised in 6.3 that a single vowel segment is never articulated as a diphthong in Australian languages. There is here a quite different phenomenon – a sequence of TWO underlying segments can be realised as a long phonetic diphthong. Although there can be a phonetic diphthong here, we must recognise, at the phonological level, a vowel followed by a semi-vowel, /jarray/, and NOT a sequence of two vowels, /jarrai/. Case inflections often have different forms ('allomorphs') depending on whether the stem ends in a vowel or in a consonant; in many languages quite different case forms would be found after a vowel-final root like /jarri/ and after a consonant-final form such as /jarral/ – the crucial fact is that /jarray/ takes consonant-final, and not vowel-final, allomorphs (examples are given in chapter 10).

6.4.6 *Consonant systems*

It will be seen that there is really very little variation in the phonological systems of the 200-odd distinct Australian languages. On being told the geographical location of a language it is possible to predict its consonantal system with a fair probability of success. We need to know whether it lies in a single-apical or double-apical area, in a single-laminal or double-laminal area, in the single-dorsal or double-dorsal area, and its position with respect to the single-lateral line (all illustrated in map 5). Three-vowel and five-vowel systems are also geographically predictable; the parameter on which there is most variation concerns whether or not vowel length is phonologically significant.

The maximal regular consonant system, which applies to several score languages, includes six stops, six nasals, four laterals, two rhotics and two semi-vowels – a total of twenty consonants (to which must be added the three vowels). The minimal system shows four stops, four nasals, one lateral, two rhotics and two semi-vowels – only thirteen members. Warrgamay, the example given of this type of system, also has a length distinction in vowels but its northerly neighbour Dyirbal lacks this (and has just sixteen phonemes in all).

Consonant systems which differ markedly from the pattern outlined here are probably all the result of recent phonological change to a system of the regular type. Fricative allophones may develop after long vowels and then, when the length contrast is simply dropped, fricative phonemes will contrast with stops. Some of the changes that have occurred are summarised in 7.1.1; these have led to a striking increase in the size of consonant systems – the largest known are languages of the Arandic subgroup and Anguthimri, with at least twenty-seven members each. A glottal stop phoneme is found in some parts of Australia. In languages of the Cape York Peninsula it has developed quite recently (see 7.1.1); the glottal stop also occurs – as a syllabic prosody – in some of the languages from Eastern and Central Arnhem Land, its genesis here being as yet untraced. Changes that have led to increase in the size of vowel systems are also mentioned below, in 7.1.2.

Just two Australian languages are known which have only twelve consonants, one less than the nominal minimum we have described. In Banjalang, from north-east New South Wales, original /r/ and /rr/ have fallen together as a single rhotic /ɾ/; this language also has four vowels with contrastive length. In Nyawaygi, from eastern Queensland, slightly more complex historical changes which affected /d/ have led to a modern system of only twelve consonants (there are also three vowels, with significant length). Warrgamay, Nyawaygi's northerly neighbour, has not undergone these changes and still retains thirteen consonants. Comparison of cognates between the two languages is instructive:

Warrgamay	Nyawaygi	
dubi	*rrubi*	'worm'
dagu	*rragu*	'hammer bird'
gadala	*garrala*	'dry'
baadi-	*baarri-*	'to cry'
wudu	*wuru*	'nose'
bundiny	*bundiny*	'grasshopper'
yirra	*yirra*	'teeth'
wuramba	*wuramba*	'scrub turkey'

In Nyawaygi, initial *d* has changed to *rr*, while intervocalic *d* has become *r* before *u* and *rr* before other vowels; *d* now remains only in the consonant cluster *-nd-*. We can show in (7) the distribution of the three sounds *d*, *rr* and *r* in pre-Nyawaygi, before these changes took place, and in the modern language:

(7)

		word-initially (#–V)	between vowels (V–V)	before a consonant (V–C)	after a consonant (C–V)	word-finally (V–#)
In pre-Nyawaygi	*d*	+	+		+	
	rr		+	+		+
	r	+	+	+		
In modern Nyawaygi	*d*				+	
	rr	+	+	+		+
	r	+	+	+		

Originally, all three sounds contrasted in one environment – between vowels – showing that there were then three phonemes /d/, /rr/ and /r/. After the changes we have described, *d* occurs only as second element of a consonant cluster (in fact, only after *n*); it is in complementary distribution with *rr* and *r*, neither of which can occur in this environment. Since [d] is phonetically most similar to [rr], the simplest phonemic solution is to take them as allophones of a single phoneme; this is pronounced as [d] after /n/, and as [rr] elsewhere.

6.4.7 *Early transcriptions*

In the early days of white settlement a local policeman or squatter would take down some words from the local language, attempting to spell them according to the orthographic conventions of English. Some of these vocabularies are at first sight difficult to interpret. Nevertheless, by comparing several different transcriptions of the same word – against a background knowledge of the sounds and sound combinations found in Australian languages – it is often possible to infer its phonetic and sometimes its phonological form.

The 'Pallanganmiddang' language (K on map 7 in chapter 8), spoken around Tangambalanga just to the east of Wodonga in Victoria, has long been extinct. It is known only from three nineteenth-century vocabularies. In the early days of the Port Phillip settlement, the Chief Protector of Aborigines, George Augustus Robinson, roamed over a wide area contacting his wards; on 30 September 1844 he recorded some 280 words in the 'Pal-ler an mitter language'. The other two vocabularies were both taken down by Thomas Mitchell, a pioneer settler in the region. Mr Mitchell filled in 42 words on a questionnaire sent around by R. Brough Smyth, published on page 67 of volume II of Smyth's opus *The Aborigines of Victoria* (1878) under the heading 'Tangambalanga – Pallanganmiddah tribe'; there are also a score of place names in the 'Upper Murray district' on pages 174–5 of that work. Then, in the next decade, he entered some 110 words onto a questionnaire for Edward M. Curr; these were published just as 'Upper Murray' on pages 562–3 of volume III of Curr's *The Australian race* (1886). Mitchell plainly had not kept a copy of the earlier list, for the spellings used are totally different.

By comparing these three vocabularies it is possible to infer a certain amount about the phonetic form of words in the language:

	Robinson 1844	Mitchell 1878	Mitchell 1886	possible form
'foot'	*teer.rer*	*teyrah*	*gerra*	[jiirra]
'moon'	*yow.er.rer*	*yow-warra*	*huerra*	[yuwirra]
'head'	*poor*	*booaw*	*bua*	[bu(u)wa]
'nose'	*nar*	—	*nga*	[ŋa(a)]

It is clear that the initial consonant in the word for 'foot' is some sort of laminal stop; it is impossible to be sure whether it was lamino-interdental or lamino-palatal – the initial 't' given in the first two columns suggest [dh] while 'g' points rather to [j]. We cannot in fact tell whether there was a laminal contrast at the phonological level in this language.

Aboriginal Australian place names are often spelt in such a way that it is hard to infer their original phonetic form; unlike the examples just given there is usually only one spelling available for a name. The laminal stop /j/ may be represented by 'g' or 'j' or 'ch' or 'd' or 'dy' or 'dj' or 't' or 'ty'. Initial /ŋ/ is occasionally shown as 'ng' or 'gn' but is more often rendered as 'n' or 'h' or 'g' or is simply omitted; 'r' may indicate a rhotic or vowel quality – it is hard to know whether a spelling like 'Marba' represents [marrba] or [maaba] or just [maba]. The letter 'u' may be used for /u/ – following its occurrence in English words such as *put* – or else for /a/ – on the analogy of English *but*.

6.5 Proto-Australian consonants

The phonologies of Australian languages resemble each other in terms of features which are relatively rare in languages from other parts of the world – a consistent contrast between apical and laminal series (and often, further contrast between two laminals and/or two apicals), a nasal corresponding to every stop, a contrast between two rhotics, and – over a good proportion of the continent – a lateral in every non-peripheral series. There are also striking similarities concerning which consonants may begin and which may end a syllable, and the kinds of consonant clusters that are encountered.

All this suggests that it should be possible to reconstruct the phonological system for pA. In this section we consider the inventory of pA consonants, and in the next the likely phonological structure of words in pA.

When linguists chart the phonemes of a language they usually arrange them according to the passive articulator, working from front to back of the mouth. By this system the stops of Pitta-Pitta would be set out:

labial	interdental	alveolar	postalveolar	palatal	velar
b	*dh*	*d*	*rd*	*j*	*g*

An arrangement of this kind, while quite adequate for many languages, misses important generalisations that are needed to explain the phonological systems of Australian languages, and the relations between them.

For all Australian languages there is a natural grouping of *dh* with *j*, of *d* with *rd* and also of *b* with *g*. The most important characterisation is in terms of active articulator; if there is then a contrast between apical and/or between laminal sounds, this can be described in terms of passive articulator. Thus we need an arrangement:

apical		laminal		peripheral	
alveolar	postalveolar	interdental	palatal	dorsal	labial
d	*rd*	*dh*	*j*	*g*	*b*

Nasals and laterals are then classified in the same way – see 6.4.2–3.

To speakers of English, the lamino-interdental stop /d̪/ (which we are writing as /dh/) may appear phonetically more similar to apico-alveolar /d/ than to the lamino-palatal stop /j/. And particularly with the nasals, /n̪/ (our /nh/) may be hard to distinguish from /n/. This is an indication of how our phonetic awareness is affected by the phonological system of our native language. Within the Australian family there is a connection from LAMINO-interdental /d̪/, /n̪/ to LAMINO-palatal /j/, /ny/ and almost never to APICAL /d/, /n/.

In 2.1 we referred to the Australian custom of tabooing not only the name of a dead person, but also a lexeme that is phonologically similar to it. The question of what counts as 'phonologically similar' is an important one, which has not yet been systematically investigated. But it is significant that in Yolŋu a tabooed lexeme may have a lamino-palatal phoneme corresponding to a lamino-dental phoneme in the proper name (or vice versa) – thus, *bithiwul* 'no, nothing' dropped out of use on the death of a woman named Bitjiŋu (another example was given in 5.4.1); this is a clear demonstration of the link between the two laminal series, in this language.

We have mentioned that although more than half the languages of Australia show a phonological opposition between two laminal series – /dh/, /nh/ versus /j/, /ny/ – the remaining languages lack this contrast. We will – for consistency – always use symbols /j/, /ny/ for the laminal stop and nasal in a single-laminal language. Sometimes a single laminal stop will have both interdental and palatal allophones – frequently [dh] before /a/ or /u/ and [j] before /i/. In other cases the pronunciation can be always palatal or – in just a few languages – always interdental. It is not unusual for a single laminal stop to have the tongue touching all of the hard palate, the alveolar ridge, and the upper and lower teeth – combining both of the articulations in figures 4 and 5. (Nasals always behave exactly like stops.)

It is important to realise the different values that /j/, /ny/ have in these two kinds of phonological system. In a single-laminal language /j/ and /ny/ refer simply to LAMINALS, and can have palatal and/or interdental allophones. But in a language with laminal contrast (a double-laminal language), /j/ and /ny/ refer specifically to LAMINO-PALATALS, phonologically distinct from and contrasting with lamino-interdentals /dh/ and /nh/.

When examining cognates between double-laminal and single-laminal languages, we find in almost every case laminal corresponding to laminal. Compare the Western Australian Yinggarda, a double-laminal language, and – from the opposite side of the continent – the single-laminal Dyirbal:

Yinggarda	Dyirbal	
nyina-	*nyina-*	'to sit'
nhurra	*nyurra*	'you all'

Or compare the double-laminal language Ngarluma with the single-laminal Western Desert language (Gugada dialect):

Ngarluma	Gugada	
gunyji(rri)	*guji(da)*	'one'
gudharra	*gujarra*	'two'

Both types of laminal from a double-laminal language correspond to the sole laminal in a single-laminal language. Thus we get correspondences *ny*:*ny*, as in 'sit', *j*:*j*, as in 'one', and also *nh*:*ny*, as in 'you all', *dh*:*j*, as in 'two' (but scarcely ever *nh*:*n* or *dh*:*d*).

Similar remarks apply to apicals. Languages with a single apical stop and nasal sometimes have exclusively apico-alveolar articulation; but in other cases both apico-alveolar and apico-postalveolar allophones can occur – often [rd] after /u/ and [d] elsewhere. When cognates can be established between double-apical and single-apical languages, both types of apical in the former type of language will correspond to the sole apical in the latter – we find correspondence sets *d*:*d*/*n*:*n* and also *rd*:*d*/*rn*:*n*.

Now all Australian phonologies include /b/, /g/, /m/ and /ŋ/. There are sufficient wide-ranging cognate sets clearly to support /b/, /g/, /m/ and /ŋ/ in the phonological system of pA. That is, there are languages in all parts of the continent with *guna* 'faeces', *bina* 'ear', *ŋamun*~*ŋaman* 'breast, woman', and so on. All Australian languages also have the two semi-vowels /y/ and /w/ and almost all have at least two rhotics. Cognate sets are harder to find here, but it is a reasonable supposition that pA also had these four phonemes.

The important open questions concerning pA phonology are: (i) did it have one or two laminal series; (ii) did it have one or two apical series; (iii) did it have a lateral in each non-peripheral series, or did it have just one lateral? We now consider these questions one at a time.

6.5.1 *pA laminals*

There are two possibilities, each equally plausible on a priori grounds. That pA had a contrast between two laminal series, but this has simply been lost (i.e. neutralised) in languages from the non-shaded areas on map 5. Or that there was a single laminal stop (and nasal) phoneme in pA, probably with lamino-palatal and lamino-interdental allophones, and this erstwhile phonetic distinction has become phonologically significant in languages of the shaded area in map 5.

It is possible to assemble more than a score of cognate sets that involve laminal correspondences, with each attested in several single-laminal and several double-laminal languages. Thus the second person plural pronoun 'you all' has the form *nhurra*:*nyurra* in perhaps a hundred languages in all. The first segment is always a lamino-interdental nasal in a double-laminal language, and just the laminal nasal in a single-laminal language. We can use *NH* to represent the sound in pA that has given rise to this correspondence:

NH – *nh*:*ny*

Thus we write the pA form of this pronoun as **NHurra*.

Most Australian languages have *nyi*(*i*)*na*- as the verb 'to sit'. The first segment is a lamino-palatal nasal in almost every double-laminal language, and the sole laminal nasal in a single-laminal language. We can use *NY* for the pA sound relating to this correspondence:

NY – *ny*:*ny*

and write the pA form as **NYi*(*i*)*na*-.

Similarly for laminal stops. Using corresponding symbols:

DH – *dh*:*j*   *J* – *j*:*j*

we reconstruct 'one' as **gu*(*NY*)*Ji*- and 'two' as **guDHarra*.

It is now instructive to examine the phonetic environments in which *NH*, *DH* and *NY*, *J* appear. Consideration of the score or so available cognate sets shows that:

DH, *NH* are followed by /u/ or /a/, not by /i/;
J, *NY* are followed by /i/, not by /u/ or /a/.

The pA sounds *DH* and *J* are thus in complementary distribution – they occur in mutually exclusive environments. This suggests that there was a single laminal stop phoneme in pA and that it had lamino-palatal articulation before /i/ – this has given rise to the correspondences labelled *J* – but lamino-interdental articulation before /a/ and /u/ – with this original allophone giving rise to correspondences labelled *DH*. Exactly parallel remarks apply for the nasal.

Many modern single-laminal languages continue this allophonic distribution. /ji/ is [ji] but /ja/, /ju/ are [dha], [dhu]. The modern double-laminal languages must have introduced [j] before /a/ and /u/ and/or [dh] before /i/, so that there is now a phonological contrast between /j/ and /dh/, with both types of laminal appearing in the same environment.

Details of modern phonologies provide ample support for this conclusion. Yanyuwa, for instance, has sequences /ja/, /ju/ in addition to /dha/, /dhu/, /ji/ but has no examples at all of /dhi/ in word-initial position and only four occurrences (out of a 2,500-item dictionary) word-medially. Many other languages show a contrast between /j/ and /dh/ only before certain vowels, or only at certain positions in the word. Even in languages that do have all of /ja/, /ju/, /dhi/ there are many fewer instances of these sequences than there are of the inherited /dha/, /dhu/, /ji/. For instance, in Guugu Yimidhirr the chance of the vowel which follows a laminal consonant being *i* is about 25 per cent after *dh* but around 60 per cent after *j*.

In one or two modern languages the occurrence of *nh/dh* or *ny/j* depends on the preceding, not the following, vowel. For instance, in Warluwarra /nh/ and /ny/ are contrasting phonemes; but the accusative suffix on pronouns has the allomorph *-nya* after /i/ and *-nha* after other vowels. A switch from 'following vowel' to 'preceding vowel' conditioning may have been one of several factors leading to the appearance of a laminal contrast at the phonological level. Another factor could have been borrowing from neighbouring languages that had a different allophonic alignment – if /ja-/ is [dha-] in language A but [ja-] in B then [jana] could be borrowed from B in that form, especially if A already had a word [dhana] with different meaning. Assimilations, onomatopoeics, and analogic remodelling may also have played a role in about half the languages of the continent taking the original pA PHONETIC distinction between lamino-interdental and lamino-palatal sounds and making it a PHONOLOGICAL contrast, at least in certain environments/structural positions in the word.

6.5.2 *pA apicals*

We can now consider whether pA had an opposition between two apical series – apico-alveolar versus apico-postalveolar (retroflex) – with the original contrast being neutralised in most of the languages of Queensland and New South Wales. Or whether there were a single apical stop and nasal in pA, with an apical contrast evolving in some western language and this contrast then diffusing over the whole western portion of the continent.

A number of cognate sets can be assembled. Those given below involve forms occurring in one or more of a group of double-apical languages from Western Australia (Western Desert, Walmatjari etc.), on the left, and forms occurring in one or more of a group of single-apical languages from eastern Queensland (Dyirbal, Yidiny etc.), on the right:

double-apical form	single-apical form	
ŋana	*ŋana*	'we all'
jana	*jana*	'they all'
jina	*jina*	'foot'
bina	*bina*	'ear'
gurnrdu	*wundu*	'penis'
gurnga	*gunga*	'raw'

We can use *N* to label *n*:*n* correspondences, given in the first four lines, and *RN* for *rn*:*n* correspondences, in the last two lines; and similarly *D* for *d*:*d* and *RD* for *rd*:*d*.

An examination of the occurrence of these and other correspondence sets (e.g. *wurngu*:*wungu* in 2.2) shows the following pattern:

RN, *RD* occur almost exclusively following /u/;
N, *D* occur almost exclusively following /a/, /i/.

This suggests that pA may have had a single apical stop and nasal, with retroflex allophones after /u/ and alveolar allophones elsewhere. This is the situation in many eastern languages – we find [ad], [id] for /ad/, /id/ but [urd] for /ud/. Over the western two-thirds of the continent, contrastive sequences [ard], [ird] and [ud] have evolved so that there is now a phonological distinction between apico-alveolar and apico-postalveolar stops. Similar remarks will apply for nasals.

Our historical inference is supported by the distribution of apicals in modern languages – in the majority of double-apical languages there is an apical contrast in medial but not in initial position; this is discussed further in 6.6. Further support is provided by the statistical distribution of apicals following vowels in modern languages. An examination of sequences of vowel followed by apical stop, nasal or lateral in a dictionary of Pitjantjatjara showed that after /u/ 53 per cent of the apicals are retroflex, whereas after /a/ or /i/ only 39 per cent are retroflex; there is a slight but clear correlation between /u/ and following retroflexion.

There are some apparent exceptions to the general pattern we have noted. For instance, *ŋuna-* 'to lie down' in double-apical languages such as Warlpiri is certainly cognate with *wuna-* 'to lie down' in Yidiny and other single-apical languages. We would have expected correspondence *RN* – instead of the occurring *N* – after /u/. We shall show, in chapter 12, that these forms go back to an archaic monosyllabic verb root **ŋu-*, and that *-na* was originally the imperative inflection (the modern verb roots *nyi*(*i*)*na-* 'to sit' relate to a pA root **nyii-* in an exactly similar way). It may be that the allophone [rn] only appeared after a /u/ WITHIN THE SAME MORPHEME, not across a morpheme boundary.

This exemplifies one way in which an original phonetic distinction between apico-alveolars and apico-postalveolars could have become phonologically significant. When, by grammatical reanalysis, the originally monosyllabic root **ŋu-* 'to lie down' was replaced by a new disyllabic root *ŋuna-* (the original morpheme boundary in **ŋu+na-* being eliminated in this reanalysis) an intramorphemic sequence [un] would have resulted, contrasting with the established sequence [urn]. The factors listed in the last section, as possible contributors to the evolution of a laminal distinction, are likely also to be relevant here.

It is probable that an apical contrast arose quite early in the development of the Australian language family, some time earlier than the first signs of a laminal contrast. Areal diffusion – allied to genetic inheritance from an intermediate proto-language that had an apical contrast – has ensured that this distinction occurs over all languages in the western and central states (except for one or two in the Daly River area). The apical contrast – averaged over all the languages in which it occurs – probably carries a greater functional load than does the laminal contrast, in languages in which it occurs; this could be further evidence for the greater antiquity of the emergence of an apical contrast, at the phonological level.

6.5.3 *pA laterals*

It only remains now to decide whether pA had one or more than one lateral phoneme.

There are suggestive cognates, involving laterals, between double-apical and single-apical languages. Note *dhurrgurl*:*dhurrgul* (5.1) and also

Western Desert	*ŋali*	Dyirbal	*ŋali*	'we two'
Western Desert	*burlga*	Dyirbal	*bulgan*	'big'
Pitta-Pitta	*ŋurlu*	Jabugay	*ŋulu*	'forehead'

A correspondence between *rl* and *l* is found predominantly after *u* whereas *l*:*l* generally occurs after *a* or *i*. This suggests a single apical lateral in pA, paralleling the single apical stop and nasal (and with analogous allophony).

It has not yet proved possible to assemble sufficient cognates involving laminal laterals – between double-laminal and single-laminal languages – to provoke any generalisation here. But since we were able to conclude that pA had just one laminal stop and nasal, it seems likely that it would have had AT MOST one laminal lateral.

The question is now whether pA was like modern languages east of the Gulf, in having just one lateral, the apical /l/. Or whether it also had a laminal lateral, conforming to the modern pattern west of the Gulf (the norm is for a lateral in each non-peripheral series – we have reconstructed just one apical and one laminal series for pA). An answer to this question would hinge on the cognates, in eastern languages, for words involving a laminal lateral in languages from the west. There are insufficient cognate sets known on which to base a firm answer at the present time.

My GUESS is that pA did have two laterals – /l/ and /ly/. Intervocalic /ly/ may have become /j/ or else /l/ in eastern languages, and preconsonantal /ly/ may have become /ny/ or /l/.

Some support for this position is provided by O'Grady's study of recent changes in the Ngayarda subgroup from Western Australia. Proto-Ngayarda had six stops and nasals and four laterals. A typical daughter, Yinyjibarnrdi has preserved the stop/nasal contrasts but eliminated the two laminal laterals. /lh/ only occurred intervocalically and has merged with /dh/ in that position; /ly/ has simply been dropped preconsonantally and has merged with /j/ medially and finally. A similar development could possibly have taken place between pA and the present-day eastern languages, with some focal change spreading by diffusion to give a homogeneous 'single-lateral' area.

6.5.4 *Summary*

The evidence suggests that pA had a quite small consonant inventory:

(8)

	apical	laminal	dorsal	labial
stop	*d*	*j*	*g*	*b*
nasal	*n*	*ny*	*ŋ*	*m*
lateral	*l*	(*ly*)		
rhotic	*rr,r*			
semi-vowel		*y*		*w*

Parentheses indicate that the question of whether there was a second lateral, /ly/, remains open. Further discussion of the pA consonant system is in 6.6.3.

The most important developments, yielding the systems described in 6.4, were:

[i] at an early stage the apical stop, nasal and lateral had retroflex allophones after /u/; this phonetic distinction became phonologically significant in one or more western languages and the contrast has spread to cover almost all languages in the west and centre, and some in the south-east.

[ii] more recently, the allophonic distinction in the laminal stop, nasal (and lateral, if present) whereby a palatal articulation occurred before /i/ and interdental elsewhere, became phonologically contrastive. The distribution of languages with two laminal series (see map 5) suggests that a laminal opposition developed independently in several different regions, and has then spread by areal diffusion.

[iii] if pA did have a laminal lateral then this must at some stage have been eliminated in eastern languages. If it were the case that pA simply had /l/, then some explanation would be required of how /ly/ developed in the west. Various lines of development are possible (to take one at random: **-lj-* > *-lyj-* > *-ly-*); further work would be needed to see which could be provided with empirical support.

Changes [i]–[iii] have taken place over wide areas of the continent. More recently there have been further quite drastic phonological changes in restricted geographical areas – the northern and southern (but not central) parts of the Cape York Peninsula, Central Australia, a small pocket in the New England tableland, and the extreme southwest. These changes have in some cases greatly extended the phonemic inventories, leading to the appearance of fricative, prestopped nasal and prestopped lateral phonemes, amongst others. Chapter 7 exemplifies these changes.

6.6 Phonotactics

Australian languages have very similar patterns of phonotactics – the ways in which different types of consonant and vowel can be combined to make syllables and words.

Typically, every word in an Australian language must involve at least two syllables. It must begin with a single consonant and can end in a consonant or a vowel; between each pair of vowels there must be either one or two consonants. That is, disyllabic words have the form:

$$C_1VC_2C_3V(C_4) \quad \text{or} \quad C_1VC_5V(C_4)$$

It is generally the case that every consonant can occur intervocalically, in the C_5 position. In contrast, the set of consonants that can occur at C_1 or C_4, or at C_2 or C_3 is usually severely limited. The C_1 and C_4 classes are often mutually exclusive (as may be the C_2 and C_3 classes), and they may not together cover the whole consonant inventory; there are sometimes one or two consonants which can occur only at C_5 position (and maybe also in homorganic nasal-stop or lateral-stop clusters).

It is thus not possible, for an Australian language, to give a structure $C_1V(C_2)$ for syllables, and then to describe a word as a sequence of these syllables. The possibilities at C_3 may be similar to those at C_1, but they never coincide; similar remarks apply to C_2 and C_4. And the occasional occurrence at C_5 of phonemes that are found in no other position further discredits a monosyllabic model.

It is necessary, for each language, to detail the possibilities at each of C_1, C_2, C_3, C_4 and C_5 in the formula for disyllabic words. (Longer words involve C_2C_3 or C_5 between each pair of vowels.) The next section surveys the phonotactic possibilities of some modern languages; the following one puts forward suggestions concerning the phonotactics of pA.

6.6.1 *Phonotactics of modern languages*

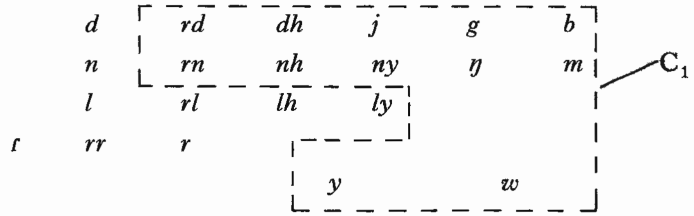
We first describe the phonological structures for the four languages whose consonant systems were discussed in 6.4. In each case disyllabic roots have one of the configurations

$$C_1VC_2C_3V(C_4) \quad \text{or} \quad C_1VC_5V(C_4)$$

For all four languages any consonant can fill the C_5 slot. But the possibilities at other consonant positions are more limited.

PITTA-PITTA, from north-west-central Queensland, has two apical and two laminal series. The full consonant inventory is:

(9)



A word can commence with a semi-vowel or with any stop or nasal other than the apico-alveolar series; this C_1 class is enclosed by a dashed line in the inventory above. (There are just a handful of exceptions known – one or two words beginning with each of *rl*, *lh*, *ɾ* and *r*.)

An unusual feature of Pitta-Pitta is that each word (and in fact each morpheme) must end in a vowel – the C_4 slot is empty. The elimination of final consonants must have been an explicit historical change in the development from pA to Pitta-Pitta.

Intervocalic consonant clusters, -C_2C_3-, can be either homorganic – where the two members have identical place of articulation (i.e. come from the same column in the phoneme inventory) – or heterorganic. Like every other Australian language, Pitta-Pitta allows homorganic nasal-plus-stop sequences:

-nd-, *-rnrd-*, *-nhdh-*, *-nyj-*, *-ŋg-*, *-mb-*

It also permits homorganic lateral-plus-stop sequences:

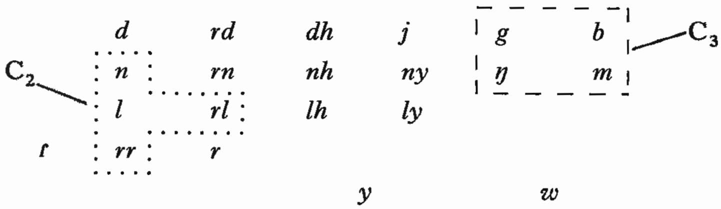
-ld-, *-rlrd-*, *-lhdh-*, *-lyj-*

In addition, it shows the following heterorganic sequences:

n followed by *b*, *g*, *m* or *ŋ*;
l, *rl* or *rr* followed by *b* or *g*.

We can indicate these classes on the consonant inventory in (10), using a dashed box for C_3 and a dotted enclosure for C_2.

(10)



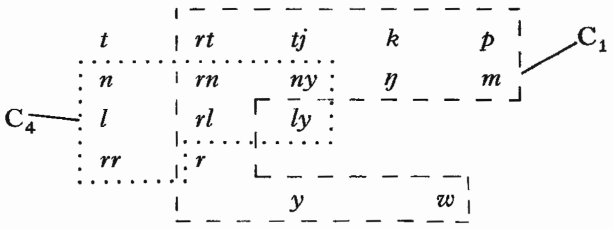
	d	*rd*	*dh*	*j*	*g*	*b*
	n	*rn*	*nh*	*ny*	*ŋ*	*m*
	l	*rl*	*lh*	*ly*		
ɾ	*rr*	*r*				
				y		*w*

It will be seen that C_3 is a subset of C_1 and that these classes are quite distinct from C_2. Phonemes *d, lh, ly, r* and *ɾ* are included in none of C_1, C_2, C_3 (for heterorganic clusters) – they occur only at the intervocalic C_5 position, and within homorganic clusters *-nd-*, *-ld-*, *-lhdh-* and *-lyj-*.

We can draw from these data some important generalisations, which recur in the phonotactics of other Australian languages. The first element of a heterorganic cluster is apical, but it is an apical nasal, lateral or rhotic, never a stop. The second element is preeminently a peripheral stop, but it can be a peripheral nasal; the second element can never be an apical, nor can it be a lateral or rhotic.

The Pintupi dialect of the WESTERN DESERT language has two apical but a single laminal series, giving an inventory:

(11)



t	*rt*	*tj*	*k*	*p*
n	*rn*	*ny*	*ŋ*	*m*
l	*rl*	*ly*		
rr	*r*			
		y		*w*

A word in Pintupi can commence with a semi-vowel, with any stop or nasal bar the apico-alveolar, or with *rl* or *r*; these are enclosed by a dashed line in the inventory. It can end with a vowel or with an apical or laminal nasal or lateral, or with the trill *rr* – these are within the dotted box.

Homorganic clusters at $-C_2C_3-$ parallel those for Pitta-Pitta – all nasal-stop and lateral-stop possibilities are encountered:

-nt-, *-rnrt-*, *-nytj-*, *-ŋk-*, *-mp-*; and *-lt-*, *-rlrt-*, *-lytj-*

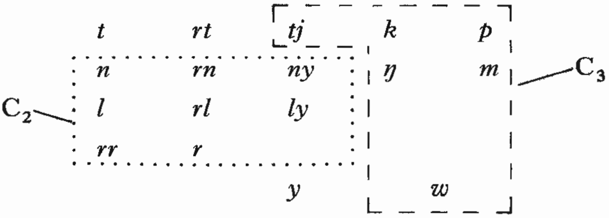
Heterorganic clusters comprise:

n or *rn* followed by *p*, *k*, *m*, *ŋ* or *tj*;
ny followed by *p*, *k*, *m* or *ŋ*;
l, *rl* or *rr* followed by *p*, *k*, or *tj*;
ly or *r* followed by *p* or *k*.

There are also clusters *rr* + *m* and *r* + *w*.

We can indicate these classes on the full inventory:

(12)

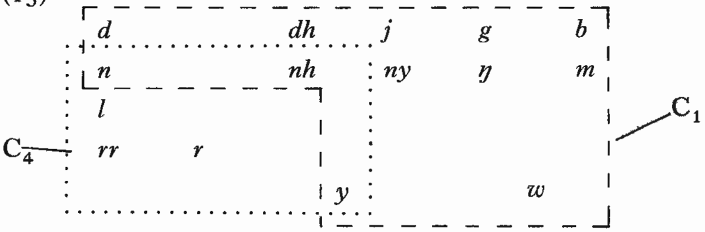


Again the C_3 class is included within the C_1 class. It is also noteworthy that C_4 is identical to C_2, except that only C_2 includes *r*. The only consonant not included in any of C_1, C_2, C_3 (for heterorganic clusters) or C_4 is the apico-alveolar stop *t* – this occurs in C_5 position, and within homorganic clusters *-nt-* and *-lt-*.

It will be perceived that there is considerable similarity between Pitta-Pitta and Pintupi phonotactics. A significant difference is that whereas in Pitta-Pitta C_2 is confined to apicals and C_3 to peripherals, in Pintupi both classes also include laminals.

GUUGU YIMIDHIRR, from the far north-east coast of Queensland, has two laminal and just one apical series; being east of the Gulf it has a single lateral. The consonant inventory is:

(13)



Words can commence with any semi-vowel, stop or nasal – the dashed area in (12). They can end in the lateral, either rhotic, the apico-alveolar nasal *n*, the lamino–interdental nasal *nh* or the laminal semi-vowel y – shown by a dotted line. Unlike Pitta-Pitta and Pintupi, there are three phonemes which can both begin and end a word, *n*, *nh* and *y*. (But whereas *n* is the second most frequent – *l* being the most frequent – word-final consonant, it is very rare initially; only around 1·5 per cent of the words in a Guugu Yimidhirr dictionary commence with *n*. *y* is fairly common both initially and finally, while *nh* is fairly rare in both positions.)

At -C_2C_3- positions Guugu Yimidhirr allows homorganic nasal-plus-stop clusters:

-nd-, *-nhdh-*, *-nyj-*, *-ŋg-*, *-mb-*

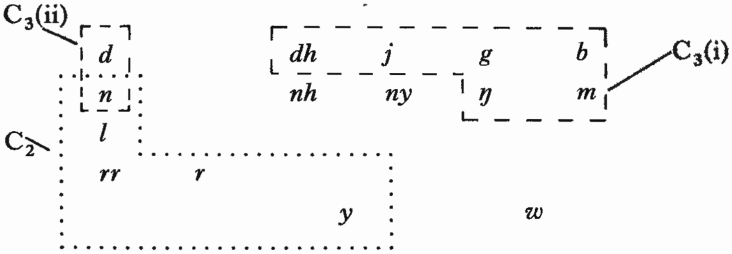
but shows no homorganic lateral-plus-stop sequence (it is in this unlike Pitta-Pitta and Pintupi but in fact like the majority of Australian languages). Heterorganic clusters are of two quite different types:

(i) *n*, *l*, *rr*, *r* or *y* followed by *b*, *g*, *m*, *ŋ*, *dh* or *j*;

(ii) *r* followed by *d* or *n*.

These are shown in (14), using a dashed line for C_3 and a dotted enclosure for C_2:

(14)



Note that C_2 is identical with C_4 save for the lamino-interdental nasal *nh*; there is in fact one example of a heterorganic cluster beginning with *nh* i.e. *-nhg-*. C_3 is a subset of C_1; in fact laminals are much less frequent than peripherals at C_3 position – only the clusters *-ldh-*, *-ndh-*, *-yj-* and *-nj-* are attested.

There are striking similarities with Pitta-Pitta and Pintupi. Apicals, other than stops, feature at C_2 and C_4 positions, while C_3 is predominantly peripheral. One point of difference is the occurrence of *y* in C_2 and C_4 slots; this is in fact a recurrent characteristic of languages in the eastern third of the continent.

One fairly idiosyncratic oddity concerns clusters of *r* plus apical stop or nasal. These are not common; they are sometimes articulated as a sequence of rhotic followed by stop or nasal but other times as a single sound, a retroflex stop or nasal. One way of dealing with this would be to recognise a sixth, apico-postalveolar, stop–nasal series. These sounds are fairly marginal to the phonological system of Guugu Yimidhirr, and any treatment of them must be rather problematic.

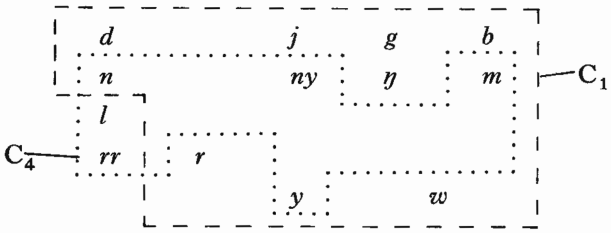
There is one other important point of difference. Although, like Pintupi, it allows only one consonant initially and finally, Guugu Yimidhirr permits clusters of THREE consonants between vowels. The possibilities again fall into two types, paralleling those for heterorganic diconsonantal sequences:

(i) *n*, *l*, *rr*, *r* or *y* followed by *mb* or *ŋg* (*-ynhdh-* and *-ynyj-* also occur);

(ii) *r* followed by *nd* (this can be pronounced as a sequence of rhotic plus apical nasal and stop, or as retroflex nasal followed by retroflex stop).

WARRGAMAY, spoken 250 miles south of Guugu Yimidhirr on the Queensland coast, has just one apical and one laminal series:

(15)



At C_1 position (the dashed box in (15)) all stops, nasals and semi-vowels occur, as well as the semi-retroflex continuant *r*. Words can end in a vowel or *n*, *ny*, *m*, *l*, *rr* or *y* (the dotted enclosure). Note that C_4 includes *n*, *l* and *rr*, like the other languages we have described; it excludes *r* but includes *ny* (like Pintupi and unlike Guugu Yimidhirr), it includes *y* (like Guugu Yimidhirr but unlike Pintupi), and it includes *m*, unlike any of the other languages.

There are homorganic nasal-plus-stop clusters

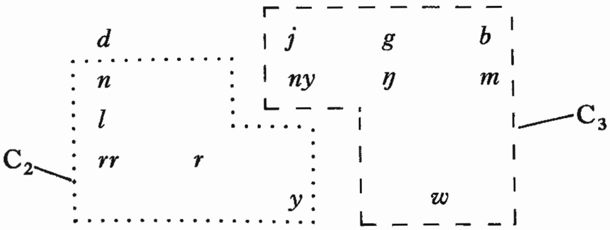
-nd-, *-nyj-*, *-ŋg*, *-mb-*

But *-ld-*, the only possible homorganic lateral-plus-stop cluster, does not occur. Heterorganic clusters of two consonants are:

l, *rr*, *r* or *y* followed by *b*, *g*, *j*, *m*, *ŋ*, *ny* or *w*;
n followed by *b*, *g*, *j*, *m*, *ŋ* or *ny*.

Plotting these on the consonantal inventory in (16) produces a familiar picture:

(16)



The first element is an apical nasal, lateral or rhotic, or – like Guugu Yimidhirr – the laminal semi-vowel *y*. The second element is a peripheral or laminal stop or nasal or the peripheral semi-vowel *w*. Note that C_2 and C_4 differ only in the inclusion of *r* in the former class and *ny* and *m* in the latter; and that C_3 is included within C_1.

Like Guugu Yimidhirr, Warrgamay also shows intervocalic clusters of three consonants:

l, *rr*, *r* or *y* followed by *mb*, *ŋg* or *nyj*.

These correspond exactly to the first type of diconsonantal cluster – a lateral, rhotic or *y* can be followed by any peripheral or laminal nasal, stop OR HOMORGANIC NASAL-PLUS-STOP CLUSTER, or by *w*.

The four languages we have surveyed are widely separated geographically and belong to quite different branches of the Australian family. Yet their phonotactics are remarkably similar. These examples were chosen more-or-less at random – almost every one of the 200 or so languages of the continent shows the same sort of patterning. Words begin with peripheral and laminal stops, nasals and semi-vowels, occasionally with some apical stops and nasals, and occasionally with *r* and/or *rl*. Words end with apical nasals and laterals, with the trill *rr*, sometimes with laminal nasals and laterals, and, in an eastern block, with *y*. All languages show homorganic nasal-plus-stop sequences for all places of articulation; homorganic lateral-plus-stop sequences occur in a minority of languages, while homorganic lateral-plus-nasal sequences are extremely rare (they do not occur in any of the four languages we have described). Heterorganic clusters usually begin with an apical nasal or lateral, or *rr*, and end with a peripheral stop or nasal, or perhaps a laminal stop (or, sometimes, nasal).

There are individual eccentricities, but they are minor in comparison with the major recurrent pattern. Warrgamay is at the southern end of a block of half-a-dozen or so languages that do permit a final *m* (but note that they do not permit *m* to begin a heterorganic cluster, at C_2 position). Guugu Yimidhirr is almost unique in having heterorganic clusters with apical stop or nasal as second member; and so on.

Intervocalic clusters of three consonants are another areal feature, found in eastern Queensland and New South Wales, in Victoria, in the Gulf country, and in some languages from Arnhem Land. They are almost always confined to lateral or rhotic (or *y*, if this occurs syllable-finally) followed by a homorganic sequence of peripheral (or sometimes laminal) nasal-plus-stop. Triconsonantal clusters have probably arisen in some cases through loss of an unstressed vowel and subsequent assimilation – cf. 7.3.

All our comments above refer to the structure of roots. Suffixes and prefixes normally have the same phonological possibilities as roots, except that they can of course be monosyllabic. Across a morpheme boundary we will normally find any C_4 followed by any C_1; this generally gives wider – or, at least, different – possibilities from the -C_2C_3- clusters permitted within morphemes.

All of the four languages described here have three-vowel systems. Three of them show a length contrast; but whereas long vowels may occur in any syllable of a Guugu Yimidhirr word, they are confined to initial syllables (which must be stressed) in Pintupi and Warrgamay.

Warrgamay and Guugu Yimidhirr differ from the other two languages in a further, important characteristic. They each have a dozen or so monosyllabic words, all of which contain a long vowel; most also have a syllable-closing consonant. Monosyllabics in Warrgamay include *maal* 'man', *jiin* 'eyebrow', *juuny* 'Herbert River', *jaa* 'mouth' *wii* 'sun' and *ŋaa* 'not'.

The majority of Australian languages are like Pitta-Pitta and Pintupi in having NO words with less than two syllables. (Sometimes there can be a few monosyllabic verb roots, each of which must take an inflection that is at least one syllable in extent; but in many languages roots, as well as words, must have at least two syllables.) It is, however, by no means uncommon to find just a handful of monosyllables (almost always less than a score). Often these must involve a long vowel, as in Guugu Yimidhirr and Warrgamay; in some languages they must all be closed syllables; or both these conditions may hold; or either. For instance, Ngiyambaa from central western New South Wales has fifteen monosyllables – eight of type CVVC, three CVC and four CVV (but no example of simply CV). The initial and final segments of monosyllables correspond to the C_1 and C_4 possibilities for longer forms.

6.6.2 *pA phonotactics*

We can now extend our discussion of the phonotactics of modern languages to see whether it provides any support for the conclusions we reached concerning laminal and apical development, and also to see whether we can infer anything about the phonotactics of pA.

I examined the phonotactics of forty Australian languages (virtually all those for which adequately detailed phonological descriptions have been provided) and later checked generalisations inferred from these against whatever information was available on the remaining languages. It is convenient to deal with consonant initials, then finals, and then medial clusters.

INITIALS (C_1 position)

Apicals are uncommon in initial position. Twenty-one languages in the sample show an apical contrast in medial and final positions, but in seventeen of them just a single apical stop and nasal can occur initially. It appears that the apical contrast is neutralised at the beginning of a word; whereas apico-alveolar and apico-postalveolar sounds are phonologically contrastive non-initially, they can occur as variants of a single element in the initial slot.

The most frequent situation is that described for Pitta-Pitta and Pintupi – the single apical in C_1 slot normally has retroflex articulation. We described this by saying that *rd* and *rn* occur initially but not *d* and *n*. A more adequate and more general statement is that there is a single apical stop and nasal at the beginning of a word, and that these correspond to both alveolar and retroflex sounds in other positions. In some languages of this type (for example Kitja, from the East Kimberleys) the single initial apical tends to have alveolar, rather than postalveolar, articulation; this is a difference at the phonetic – not at the phonological – level.

Three of the twenty-one double-apical languages do show the apical contrast in initial as well as medial and final slots (they are Dhuwala/Dhuwal, Yukulta and Yanyuwa). Irrespective of whether one or two apical series can occur in initial position, apicals are ALWAYS THE RAREST stops and nasals in that position. In Warrgamay, for instance, only 2 per cent of roots begin with *d*, and a minuscule 0·5 per cent with *n* (whereas 25 per cent of entries in the dictionary begin with *g* and 12 per cent with *m*).

It is thus scarcely surprising to find that some languages allow NO apical stops or nasals in initial positions. Some double-apical languages (e.g. Thargari) fall into this category, as do a number of single-apical tongues.

Many languages – including Guugu Yimidhirr and Warrgamay – allow no laterals in C_1 position despite the occurrence of initial apical stop and nasal. Others may allow one initial apical lateral, following the pattern for stops and nasals. But there are never more than a very small number of words commencing with a lateral, in any Australian language (other than those in which initial dropping has taken place – see 7.1).

Laminal stops and nasals occur quite frequently in the C_1 slot, in every language. If there is a laminal contrast it is almost always encountered initially as well as medially. Somewhat surprisingly, laminal laterals are highly unusual initially; many fewer languages allow laminal laterals than show apical laterals in initial position.

The most frequent word-initial segments are, in every language, the peripheral stops and nasals. In all languages, semi-vowels may occur initially and – following the frequency pattern among stops and nasals – peripheral *w* begins rather more words than does laminal *y*, although both are common.

Half or almost half the languages of the continent begin some words with *r*, the semi-retroflex rhotic continuant; there are generally only a few *r*-initials, usually around 2–3 per cent of the dictionary. It is very unusual to find any words beginning with the trilled rhotic *rr*. (In 6.4.6 we described the recent change, initial **d>rr*, by which Nyawaygi eliminated initial apical stops – it also lacks initial apical nasals – but at the expense of including initial trills.)

FINALS (C_4 position)

There are a number of languages, including Pitta-Pitta, which end all words in vowels. This is in each case a recent development, and it is often possible to reconstruct the class of consonants that occurred word-finally in an earlier stage of the language.

In languages which permit final consonants, this class always includes the apical nasals and laterals and the trilled rhotic – *n*, *l*, *rr* for a single-apical and *n*, *rn*, *l*, *rl* and *rr* for a double-apical tongue. If there is an apical contrast it is almost always operative in final, as well as in medial position; there is a significant difference here from the initial slot, which tends NOT to exhibit an apical contrast.

Most languages also allow a laminal nasal in C_4 slot; some languages from the west also permit a laminal lateral in this position. But, in strong contrast to the apicals, if there is a laminal contrast in initial and medial positions, it will as a rule NOT be found at the end of a word. The lamino-interdental versus lamino-palatal opposition is neutralised finally, with a single laminal nasal and lateral occurring in C_4 position.

It is most unusual to encounter words ending in the peripheral nasals, *m* and *ŋ*. These do occur at C_4 over limited geographical regions, and can be considered 'areal features' – more discussion is given in 8.4. The peripheral semi-vowel *w* is almost unknown finally, but the laminal semi-vowel *y* occurs as a common final segment in languages from the eastern third of the continent.

Whereas *rr* is always allowed at C_4, *r* is highly uncommon in this position. Final-*r* languages are almost all found in a limited area on the east coast, from Guugu Yimidhirr down to Dyirbal, the northerly neighbour of Warrgamay, and in Arnhem Land.

There are Australian languages in which roots and words can end in a stop, but this is quite unusual. Where final stops are encountered they generally conform to the pattern described for final nasals – apicals are the most common, then laminals, with final peripheral stops being the rarest of all.

MEDIAL CLUSTERS – HOMORGANIC

All languages show homorganic nasal-plus-stop clusters, for all places of articulation. There are few examples of homorganic lateral-plus-nasal clusters (although heterorganic lateral-plus-nasal sequences are very common). Homorganic lateral-plus-stop clusters occur in less than half of the forty languages in my sample.

Table 6.1

C_2	C_3
n, *rn*	all languages – *b*, *g*, *m*, *ŋ*; half the sample – *j*; a few – *ny*
ny	most languages – *b*, *g*, *m*, *ŋ*
l, *rl*	all languages – *b*, *g*; half the sample – *m*, *ŋ*, *j*; a few – *ny*, *dh*, *w*
rr	all languages – *b*, *g*; most – *m*, *ŋ*; half the sample – *j*; a few – *ny*, *dh*, *w*

MEDIAL CLUSTERS – HETERORGANIC

The clusters described for Pitta-Pitta, Pintupi, Guugu Yimidhirr and Warrgamay are absolutely typical of those found in other languages. The clusters in the forty language sample are tabulated in table 6.1.

No example is known of a laminal contrast – *ny* versus *nh* – in C_2 position for a heterorganic cluster.

Laminal laterals occur as the first element of heterorganic clusters, predominantly in the languages of Western Australia and the Northern Territory.

We can now assess the recurrent phonotactic patterns, in the structure:

$$C_1VC_2C_3VC_4$$

It is significant that although for no one modern language do we have the C_1 system exactly coinciding with that at C_3, and C_2 being identical to C_4, there is in every language great similarity between C_1 and C_3 possibilities and between C_2 and C_4 (where C_2 and C_3 refer to heterorganic clusters). These similarities were noted for the four languages discussed in 6.6.1 and are particularly evident in the comparative survey.

We suggested that the laminal distinction was originally conditioned by THE FOLLOWING VOWEL, palatals occurring before /i/ and interdentals elsewhere. Important supporting justification is provided by the occurrence of a laminal contrast at C_1 and sometimes at C_3 but not at C_2 or C_4 – for the latter there is no immediately following vowel that could have initiated the distinction. It was of course at an early stage – when both [dh] and [j] were allophones of a single phoneme – that the 'following vowel' provided full conditioning; but we have seen that in a double-laminal language MOST instances of /dh/ are reflexes of *[dh] before /a/ and /u/, and MOST occurrences of /j/ relate to *[j] before /i/ – the phonological distinction has been completed by the appearance of a few sequences /ja/, /ju/ and/or /dhi/. We would thus only expect a phonological contrast between laminals to operate at those positions – C_1 and C_3 – at which the conditioned allophones originally occurred. (The laminal contrast might then be generalised to apply at other structural positions; but this appears NOT TO HAVE HAPPENED in the overwhelming majority of Australian languages, an indication of the relatively late appearance of a laminal contrast.)

Our suggestion concerning the evolution of an apical contrast receives similar comparative phonotactic support. We suggested that an original phonetic distinction conditioned by THE PRECEDING VOWEL – retroflexes after /u/, alveolars elsewhere – became phonologically contrastive in western languages. But the apical contrast is in fact only operative at C_2 and C_4, those slots that do follow a vowel. Apicals do not generally occur at C_3, in a heterorganic cluster. There are usually just a few words beginning with an apical but there is generally NOT an apical contrast in this position. (The fact that there are just a few languages that have generalised the apical contrast to initial position – whereas none has a laminal contrast at C_2 or C_4 – could be taken to suggest that the evolution of an apical contrast may have preceded the emergence of a laminal opposition.)

There is one further historical inference that we can draw from the recurring phonotactic patterns. We have mentioned that Australian languages are unlike languages in many other families in that we cannot just state the phonological structure of syllables, $C_1V(C_2)$ – indicating which consonants can occur in C_1 and C_2 slots – and then represent a longer word simply as a sequence of these structures, $C_1V(C_2)C_1V(C_2)$ ... We have had to work in terms of basic disyllabic structures – $C_1VC_2C_3V(C_4)$ and $C_1VC_5V(C_4)$.

But the similarity between C_1/C_3 and C_2/C_4 is – from our survey – most striking. Peripheral stop and nasal are the most common segments initially, and they are the most frequent ones at C_3. Laminals are next most common at C_1 and they are also the next most frequent elements as the second member of a cluster. Apical nasals and laterals, and the rhotic *rr*, are always found at C_4, and also at C_2; the laminal nasal is next most common in these slots, followed by the laminal lateral. Semi-vowel *y* is found at C_4 and at C_2 only in languages from an eastern block.

The conclusion we can draw is that pA may well have operated in terms of a simple syllabic pattern, $C_1V(C_2)$, with polysyllabic roots and words involving a sequence of monosyllabic units, $C_1V(C_2)C_1V(C_2)\ldots$ In this structural pattern the initial segment of a non-initial syllable would show exactly the same possibilities as the initial segment of a word-initial syllable, and so on.

Formal reconstruction does suggest that pA probably had a full array of monosyllabic roots and words. In chapter 11 we put forward the hypothesis that pA had monosyllabic roots for singular pronouns – **ŋay* 'I', **ŋin* 'you' etc.; these were probably used without suffixes for intransitive subject function. In chapter 12 we are able to reconstruct a score or more monosyllabic verb roots.

Consideration of the form of nouns in modern languages clearly suggests that pA had a fair number of monosyllabic nominal roots – which could, presumably, also function as full words – more than any modern language (outside the initial-dropping areas). Although only a minority of modern languages show monosyllabic words, in those that do forms like *miil* 'eye', *jaa* 'mouth' and *wii* 'fire' recur very frequently (languages in which all words are disyllabic or longer often have *miyil*, *jawa* and *wiyi*).

In 5.1 I quoted some of the most common lexical forms, from Arthur Capell's 1956 list. These do show a number of interesting features. Only two end in a consonant, whereas in most modern languages about half of the nominal roots end in a consonant. Only three words (14 per cent) have a medial consonant cluster, whereas in modern languages 30–40 per cent of the words do. Of the words with a single consonant between the first and second vowels this is a stop only in *gujarra* (the one trisyllabic form in the list), *gada*, and the echoic *bibi* and *gugu*; in modern languages between a quarter and half of roots have a stop at the beginning of the second syllable. Finally, the majority of words end in *a* whereas in modern languages there are as many roots ending in *i* or *u*.

Taken together, these observations are compatible with the suggestion that many of the modern forms could relate to monosyllabic roots in pA; the medial consonants are exactly those that are permitted at the end of a syllable in Australian languages. We can speculate that an early variety of pA might have had *bin* 'ear', *bul* 'two', *jarr* 'thigh', *gun* 'faeces', and perhaps also *bi* 'breast' and *gu* 'water'. This would certainly correlate with our conclusions – arrived at quite independently – concerning monosyllabic pronoun and verb roots in pA. We are suggesting that – at the stage of historical development at which monosyllabic roots were replaced by disyllabic forms – some open monosyllabics may have simply been reduplicated (*bibi*, *gugu*) while many closed monosyllables had a vowel – usually *a* – added (*bina*, *bula*, *jarra*, *guna* etc.).

We are not of course suggesting that pA operated exclusively or even predominantly in terms of monosyllabic roots. It is possible to reconstruct some hundreds of polysyllabic roots, from all word classes; these include *jalany*, *gumbu*, *ŋanga*(*r*), *gujarra* and *gada* from Capell's list in 5.1. Our hypothesis is simply that, like most languages of Western Europe, pA allowed roots and words to have ANY number of syllables; this contrasts with the situation in most modern Australian languages where monosyllabic roots and words are either entirely lacking or else of a special type (with an obligatory long vowel and/or syllable-closing consonant etc.).

Recapitulating, it seems likely that pA had a representative selection of monosyllabic roots, and probably also monosyllabic words, of all types. Our phonological comparison suggests that pA could well have operated in terms of a canonical syllable structure, with the same possibilities applying to syllable-initial and syllable-final slots – whatever the position of the syllable in a (polysyllabic) form. In the lengthy development from pA to modern languages there has been a tendency to eliminate monosyllabic forms. For reasons that are not fully understood – but may have to do with considerations of rhythm, and preference for a stressed-syllable-followed-by-unstressed-syllable pattern – most modern languages have all or very nearly all words consisting of at least two syllables.

Once monosyllabic words had dropped out of use, we would expect the monosyllabic model of phonological structure to be lost (cf. Hale's argument that underlying structures tend to conform to possibilities in surface structure – 7.2.1); this is what appears to have happened. Intervocalic possibilities in pA would have been -(C_4)C_1-. But in modern languages initial, medial and final possibilities have changed – slightly, but sufficiently to ensure that intervocalic possibilities are not exactly those segments allowed word-finally followed by those permitted initially; there will have been a good deal of assimilation, syncope, and lenition amongst other changes. Between vowels we now get -C_5- or -C_2C_3-, and these are not identical to -(C_4)C_1-. Some languages have undergone further changes – developing intervocalic clusters of three consonants (as in Guugu Yimidhirr and Warrgamay), or not permitting consonants to end words although still allowing biconsonantal clusters between vowels (as in Pitta-Pitta – here the consonants allowed at C_2 give a clue to those which would originally have occurred at C_4).

In chapters 11 and 12 we explain the process of reanalysis by which monosyllabic pronoun and verb roots were gradually lost, and replaced by disyllabic roots – often an original monosyllabic root plus monosyllabic inflection was taken over as the new root, the grammar being restructured in such a way that it was no longer possible to recognise a morpheme boundary in the middle of the disyllabic form. Our grammatical reconstruction reinforces the phonotactic reconstruction, and suggests that pA may well have made ample use of monosyllabic forms of all kinds.

6.6.3 *More on pA consonants*

So far in this chapter we have surveyed the actual phonological organisation of modern Australian languages; and made some fairly sure inferences about the consonant system of pA (in 6.5) and about pA phonotactics. In this section we follow a natural development of these ideas, but it does lead to more speculative and programmatic conclusions. The wary reader could skip on to 6.7.

Having suggested that pA may well have worked in terms of a syllabic pattern $C_1V(C_2)$, we can draw further conclusions about the consonants that would have occurred syllable-initially and finally.

INITIALLY

Very many occurrences of *b*, *g*, *m*, *ŋ*.

Many occurrences of *j*, *ny*.

Probably just a few occurrences of *d*, and possibly some of *n*.

Probably just a few occurrences of *r*.

Some occurrences of *w*, *y*. (There are many instances of modern initial *w* and *y* being reflexes of a stop or nasal in a proto-form e.g. **g>w*, **ŋ>w*, **b>w*, **j>y*, **ny>y*. But there are some cognate sets that have an initial semi-vowel in all modern languages e.g. *ya-N* 'to go'. This, together with the fact that ALL modern languages have substantial numbers of words beginning with *w*- and with *y*-, suggest that these would have occurred initially in pA, although it is impossible to say how common they would have been in this position.)

FINALLY

Very many occurrences of *n*, *l*, *rr*.

Some occurrences of *ny*; presumably some occurrences of *ly* (if this did in fact occur in pA).

Probably a fair number of occurrences of *y*. (The segment *y* occurs syllable-finally only in eastern languages. However, comparative reconstruction of pronouns and verbs suggests that it did occur in this position in pA.)

The point to note is that these two paradigmatic systems have only three members in common – *n*, *ny* and *y*. Although we recognised 14 consonants for pA (6.5.4), only 10 or at most 11 occurred syllable-initially and only 5 or 6 syllable-finally; there would have been no position in which all 14 contrasted.

The normal principles of phonemic analysis would yield no more than 11 phonemes, if phonetically plausible equations could be made between the finals and some of the initials. We can in fact suggest that:

[i] *r* and *rr* might have been allophones of a single phoneme in pA, [r] occurring initially and [rr] finally. This is highly plausible on a priori phonetic grounds – very few languages outside Australia have more than one rhotic phoneme, but [r] and [rr] are not uncommonly found as allophones of one phoneme.

[ii] *d* and *l* might have been allophones of a single phoneme. This is phonetically plausible, and there is supporting evidence from modern Australian languages. Thus Yaygir, from north-east New South Wales, had *d* and *l* – which contrast medially – neutralised in initial position; the resulting archiphoneme can be realised either as [d] or as [l] (some speakers appear to have preferred the stop articulation and others the lateral, although it seems that either was fully acceptable). Reconstruction of pA case forms also supports this grouping; Hale has shown that the ergative inflection goes back to **-du* (after consonants) ~**-lu* (after vowels) and similarly that locative relates to **-da*~**-la* – see 10.3.2. With our suggestion that *d* and *l* could have been allophones of a single phoneme in pA there would have been a single proto-form for each case. Note too that a common root 'to cry, weep' is *lu* (or *rlu-*) in western languages but *du-* in the east.

[iii] We are unsure whether *ly* should be posited for pA; if so, it could have been an alternant of *j*, paralleling *d* and *l*. (There is no evidence supporting this, beyond the analogy to apicals.)

Few modern languages allow peripheral nasals syllable-finally (except in homorganic clusters). There is no evidence from comparison of modern phonotactics to suggest that pA had final *-m* and *-ŋ*. However, reconstruction of noun cases and of verb conjugations suggests that pA did show *m* and *ŋ* finally.

Summarising the reduced set of pA phonemes, and their distributions:

b, g	labial and dorsal stops, occurred only syllable-initially;
j	realised as a laminal stop initially (and perhaps as a laminal lateral finally).
d	realised as an apical stop initially, and as an apical lateral finally (the full distribution may have been: [d] word initially, and after a consonant; [l] word-finally and after a vowel);
m, ŋ, ny, n	occurred initially and finally;
r	realised as a continuant initially and as a trill finally;
w	occurred only initially;
y	occurred initially and finally.

There is one further reduction that could conceivably be made, concerning the nasals. We have noted that *n* is very infrequent in initial position in modern languages (much less frequent than *d*, which is itself uncommon initially), whereas it is of course extremely common finally. The laminal nasal, *ny*, on the other hand, is well attested initially but is not so common finally (although it does occur finally in the MAJORITY of modern languages). The critical evidence comes from reconstruction of verbal conjugations, which yields syllable-final segments *l*, *rr*, *y*, *m*, *ŋ* and *n* – that is, all of those listed here as occurring finally EXCEPT *ny*. It could be that pA had a single phoneme, realised as [ny] initially and as [n] finally; after /d/ and /l/ had separated to form distinct phonemes, a contrast between /ny/ and /n/ might have evolved between vowels, and then just a few *n*-initial words could have developed, to parallel the occurrence of *d* initially. Note that this would not necessarily lead to asymmetry between nasals and stops, since the phoneme covering [d] and [l] could well have been essentially a lateral in pA, with stop articulation developing initially and after consonants at a later stage.

That is, we could have had as a pA consonant system

either	*d*	*j*	*g*	*b*	or	*j*	*g*	*b*
	n	*ny*	*ŋ*	*m*		*n*	*ŋ*	*m*
	r	*y*		*w*		*l r*	*y*	*w*

As the monosyllabic pattern of pA began to be replaced by a basic polysyllabic pattern, $C_1VC_5V(C_4)$ or $C_1VC_2C_3V(C_4)$, so /d/ and /l/, /r/ and /rr/ emerged as distinct phonemes. They contrast in intervocalic position in modern languages (although the initial/final distinction is by and large still maintained – a few words usually begin with *d* and *r*, but not generally with *l* or *rr*, and roots end with *l* or *rr*, not with *d* or *r*). This must have taken place at a very early stage, possibly still during the period of pA unity, or very soon thereafter. (It could be that the ten- or eleven-term consonant system suggested above belonged to early pA, and the thirteen- or fourteen-term system given in 6.5.4 to late pA). If indeed [j] and [ly] were allophones of a single phoneme in pA their separation into distinct phonemes may have taken place at a slightly later stage, after pA had split into a number of branches; this could account for the occurrence of laminal laterals in western languages only (*ly* may have gained phonemic status only in the western branches of the family).

Most phonological changes are regular – every occurrence of a particular segment changes in a certain way under specifiable conditions (e.g. the change *d*>*rr* word-initially in Nyawaygi, noted in 6.4.6); it is the predominant regularity of linguistic change that makes possible reconstruction of earlier stages of a language family. But there are always, in addition, a number of sporadic changes, sometimes affecting just one word in a single language. There are, in Australia, many examples of both regular and sporadic assimilations between adjacent consonants. For instance, *gunda-l* 'to cut' in Yidiny is undoubtedly cognate with *gunba-l* 'to cut' in neighbouring Dyirbal; the stop *b* has assimilated in place of articulation to the preceding nasal. (Note that there was no verb *gunda-l* already existing in Yidiny; if there had been this assimilation would have been less likely to take place. There is, however, a root *gunda-l* 'to put in' in Dyirbal). Assimilations of various types have naturally led to a preponderance of homorganic nasal-plus-stop clusters at intervocalic positions (in every modern language, homorganic nasal-plus-stop clusters greatly outnumber the heterorganic variety). In heterorganic clusters the first member is apical or laminal (never peripheral) and the second member peripheral or laminal (never apical); with homorganic clusters both members have the same place of articulation, and it can be apical, laminal or peripheral (if there is an apical or laminal contrast, it is always manifested in homorganic clusters). There must have been a great deal of assimilation between syllable-final and syllable-initial consonants within a morpheme, giving rise to the modern superfluity of homorganic clusters. But all modern languages retain A FAIR NUMBER of heterorganic sequences, and it is these that betray the phonological origins.

6.7 Vowel harmony

In comparison with consonants, the vowel systems of Australian languages are fairly simple. Most languages have just three vowels – a system that we tentatively assign to pA – although there is an area in the central north where five-vowel systems predominate. Some of the modern languages in the Cape York Peninsula have, through a series of quite recent changes, developed more vowel contrasts – these are discussed in 7.1.2.

In a scattering of modern languages, from several different parts of the continent, there is a type of 'vowel harmony', whereby a vowel in one syllable takes on the value of a vowel in an adjacent syllable. This harmony usually involves specific grammatical constituents; most commonly, the vowel in a suffix harmonises with the last vowel of the stem to which it is attached.

Warumungu, from Central Australia, provides a straightforward example. Here the dative case suffix is simply *-gV*, where *V* totally assimilates to the stem-final vowel. With stems ending in each of the three vowels we get *gardi-gi* 'man-DATIVE', *garnu-gu* 'boy-DATIVE' and *ŋaba-ga* 'water-DATIVE'. Other suffixes behave in an identical way – locative is *-ŋgV*, and so on. (Note that in other languages locative is *-ŋga* and dative *-gu*.) Gugu-Yalanji, from north-east Queensland, shows a more restricted assimilation – locative is *-ŋV* and dative *-gV*, but here V is *u* when the last vowel of the suffix is *u*, and *a* if the final suffix vowel is *a* or *i*. V is never *i* in Gugu-Yalanji.

Examination of Wagaman, an inland dialect of the same language as Gugu-Yalanji, indicates how this harmony developed. In Wagaman dative is *-gu* after stem-final *u* or *i* but *-ga* after *a*; and locative is *-ŋa* after *a* or *i* but *-ŋu* after *u*; furthermore, just occasionally *-gu* is heard after *a* or *-ŋa* after *u* (but never *-ga* after *u* or *-ŋu* after *a*). Wagaman plainly operates with underlying forms *-gu* and *-ŋa*, corresponding to the forms in languages that have no sort of vowel alternation. And it has a rule which assimilates suffixal *u* to stem *a* and *a* to *u*, but does not affect the vowel of a suffix which follows a stem whose last vowel is *i*; where *-gu* is heard after an *a* stem the rule has just failed to apply in this form. In the Gugu-Yalanji dialect the pattern for *-ŋa* (and other originally *a*-final suffixes) has been generalised to apply to ALL case affixes; in this dialect the affixes are *-ŋV* and *-gV* with *V* determined by the last stem vowel. There is no feeling of underlying forms *-ŋa* or *-gu* in Gugu-Yalanji and there are no alternations of form as there can be in Wagaman – dative is ALWAYS *-ga* after *a*, never *-gu*, and so on.

We have already mentioned that – in addition to the overriding regular sound changes – there have undoubtedly been a number of sporadic changes, affecting individual words in particular languages. These most frequently take the form of assimilations. In the last section we exemplified with a consonant sequence *gunba-l>gunda-l*; in chapter 11 we discuss a number of consonant-to-vowel assimilations involved in the development of pronouns e.g. **ŋin>nyin* (see also 5.1). There are also many instances of vowel-to-vowel assimilations – 'fire' is *buri* in Yidiny but has become *biri* in the closely related Jabugay; Yidiny *jugi* may be cognate with Wagaman *jugu* and Dyirbal *yugu* 'tree, stick, wood', suggesting an original form **jugi*, with vowel assimilation yielding *jugu* and then lenition of the initial stop giving *yugu*.

Examination of the statistical association between vowels in the first and second syllables of words in modern languages is suggestive of the amount of vowel-to-vowel assimilation that has taken place. In Dyirbal for instance, 40 per cent of the words in a 2,664-item dictionary have *u* as their first vowel, whereas 27 per cent have *u* in the second syllable. If there were no association we would predict that 10·8 per cent, or 287 words, would have *u* in both syllables; in fact 416 words have *u-u*, 45 per cent more than predicted. Similarly, there are 41 per cent more *i-i* sequences than predicted. Similar figures hold for other languages. These could be taken as evidence that there was some type of vowel harmony in the proto-language, or just that there have been many individual assimilations since pA. Certainly, there are cognate sets supporting the latter interpretation – compare Warlpiri *wanti-* with Yidiny *wanda-* 'to fall', and Dyirbal *nyunja-* with Western Desert *nyunytju-* 'to kiss' (here there appears to have been assimilation of the nasal to the following stop, and of the second vowel to the first).

Further large-scale lexical comparison would be needed to support these cognate sets. But there seems no doubt that phonological assimilation of many types has played a pervasive role in the history of Australian languages. This is partly responsible for creating the superficial – but erroneous – impression that it is hard to recognise very many cognates between different parts of the continent – see 5.1.

6.8 **Feature description**

We have described how a word can be analysed into a sequence of minimal sound units or phonemes (this is a familiar idea to those of us whose languages make use of an alphabetic orthography). The word *bama* 'person' can be described as consisting of a labial stop consonant, followed by an open vowel, followed by a labial nasal, followed by the same open vowel.

We cannot in the same way analyse *m* or *a*, say, into a sequence of elements – they do not have any contrastive beginning, middle and end as does *bama*. But we can go beyond simply listing the twenty or so phonemes for a language. We have been arranging them in arrays which show that *b* is a CONSONANT as opposed to vowels like *a*, that it is a STOP as opposed to nasals like *m* and *ŋ*, and that it is a LABIAL consonant as opposed to dorsals like *g* and *ŋ*. This suggests that for any language it should be possible to recognise a number of OPPOSITIONS BETWEEN PHONOLOGICAL FEATURES – consonant versus vowel, stop versus nasal, labial versus dorsal, and so on. A phoneme is then a bundle of features from a number of oppositions. What we are doing here is analysing a phoneme into a number of SIMULTANEOUS features – the intersection of appropriate poles from the three oppositions 'consonant/vowel', 'stop/nasal' and 'labial/dorsal' effectively defines the phoneme /b/, for instance (these features are common to all allophonic variants of /b/). This is a slightly different sort of analysis from the description of a word as a SEQUENCE of phonemes. It is possible to pronounce a single phoneme like *m* or *a* (even if it would never normally be articulated alone in the language under consideration). It is NOT possible to pronounce 'labial' or 'stop'; we must have a sufficient bundle of features in order to obtain a phoneme, and it is this that is a speech sound, with a range of phonetic realisations.

Just as different languages have different inventories of phonemes, so they must operate in terms of different feature oppositions. European and Australian languages all have the labial/dorsal opposition. Though all the former have a voiced/voiceless opposition most of the latter do not; on the other hand, no European language has an alveolar/postalveolar opposition. It is impossible, on a priori grounds, to specify a limited 'universal' set of feature oppositions and to predict that each individual language will choose a selection from this set. Although all languages exploit the same vocal apparatus there are a huge number of phonetic contrasts that can be made; it is impossible to predict with confidence which may and which may not conceivably function as a phonologically significant opposition in some language. If an epidemic had wiped out the languages of Southern and Eastern Africa (and Lardil – see 3.4) a few hundred years ago, many linguists would probably never imagine that clicks could be phonologically significant sounds. No language presently known includes a nasalised ingressive velic trill (like the noise made in snoring): should we allow for this in a 'universal set' of oppositions or not? There are no a priori answers to questions of this nature.

What we can do is establish an optimum set of feature oppositions that will serve to define the phonemes of ANY GIVEN LANGUAGE. The languages of the Australian family are so close in their phonologies that it is surely valid to try to establish a set of oppositions that will serve for all the languages of this family. Most oppositions will occur in every language, while some – such as alveolar versus postalveolar – will only be operative over parts of the continent. The features we recognise are those needed for regular Australian phonologies, as described in this chapter (leaving aside the contrast between the two dorsal series, which is not yet well enough described or understood for us to suggest a feature treatment of it). In the next chapter we mention more extensive phonological systems that have developed by recent, regular changes in a few limited regions; these could be handled by a natural extension of the features described below.

Our aim is to provide a feature description of Australian phonologies which will satisfy the following needs: (i) permit the most economic and general statement of allowable phonotactic patterns – 6.6.1; (ii) yield the most perspicuous statement of allomorphic alternations – e.g. 10.2, 10.3; (iii) give the most straightforward statement of historical changes – 6.5, 6.6 and chapter 7; (iv) explain the areal correspondence between Australian phonologies, and the way loans from one language are represented in the phonology of another.

Our investigation of feature oppositions for the Australian family will follow the principles established by N. S. Trubetzkoy in his seminal *Principles of phonology* (1939; English translation, 1969). The languages Trubetzkoy discussed generally have fricatives and sibilants, and series-generating components such as voicing, aspiration, glottalisation, rounding, and so on; most of them have only one lateral and one rhotic. It will be seen that Australian phonologies pose new problems of description and although we work in terms of Trubetzkoy's theoretical distinctions, they are applied to systems quite different from those he dealt with. There is one further important difference in our treatment. Trubetzkoy followed Saussure in separating synchronic study – the description of a language at one point in time – from diachronic investigation – how a language changes through time. But any language system reflects past historical changes, and contains within itself the potentiality for future change; this can be seen particularly in the Australian family where diverse languages, spoken in totally different regions, have changed quite independently in remarkably similar ways (see 7.1). We thus prefer to follow the lead of Baudouin de Courtenay and provide a description that has both synchronic and diachronic applicability, and is justified on both synchronic and diachronic criteria.

Trubetzkoy distinguished first between oppositions that are 'bilateral' (involving just two members) and those that are 'multilateral' (with more than two). In English *d/t* would be bilateral since no other phoneme has the features shared by this pair, whereas *d/b* would be part of a multilateral opposition – Trubetzkoy suggested that everything which is shared by *b* and *d* is also shared by *g*. ALL the oppositions we set up for the Australian family turn out to be bilateral (as MOST oppositions do, for any language). This should be taken as a property of the data that are being described; I do not have any theoretical predilection against multilateral oppositions.

The most important classification of oppositions suggested by Trubetzkoy is into privative, gradual and equipollent types. In a PRIVATIVE opposition one feature is characterised by the presence, and the other by the absence, of a certain mark e.g. voiced/voiceless stop, nasalised/non-nasalised vowels. In a GRADUAL opposition the features show different degrees or gradations of a property e.g. close/mid-close and then mid-close/mid-open tongue heights in the vowel oppositions *i/e*, *e/ɛ*. In an EQUIPOLLENT opposition both features are logically equivalent; there are neither gradations, nor the presence or absence of any property e.g. labial versus dorsal.

No gradual oppositions are needed for standard Australian phonologies. The most important decision is whether a particular opposition is privative or equipollent. There are a number of criteria on which to base this decision. Firstly, when in an historical change one established phoneme changes in some environment into another established phoneme, there will generally be a privative opposition between the phonemes. There are many examples in Australian languages of changes *g*>*w*, *ŋ*>*w*, *l*>*r* and *r*>*l*, suggesting that all of the three oppositions *g*/*w*, *ŋ*/*w* and *l*/*r* are privative in nature; there are in Australia no changes *g*>*b* or *b*>*g*, tending to confirm dorsal/labial as an equipollent opposition. Secondly, a privative opposition can often be neutralised in a particular environment; the opposition DOES NOT APPLY in the environment, with just one of its features (or, sometimes, a conglomerate feature) appearing there. We can quote as an example the opposition between alveolars and retroflexes being neutralised at initial position in most double-apical languages (6.5.2, 6.6) and the neutralisation between *d* and *l* at initial position in Yaygir (6.6.3). Equipollent oppositions are never neutralised.

One feature in a privative opposition can normally be described as 'marked' and the other as 'unmarked'. The unmarked feature normally includes less deviation of the organs of speech from their neutral position (as in normal breathing). If historical change occurs only in one direction it is usually the marked member which is replaced by the unmarked member – we get *g*>*w* and *ŋ*>*w* but not *w*>*g* or *w*>*ŋ* and so conclude that *w* is the unmarked member of both oppositions (but the existence of changes *l*>*r* and also *r*>*l* gives no clue to markedness in the *l*/*r* privative opposition). It is often the unmarked member that appears in a position of neutralisation, although this can depend on structural position in the word – see 6.8.2. Trubetzkoy noted that a particular privative opposition may involve different marking in different languages; for *t*/*d* the unmarked member is sometimes *t* – the opposition can then be characterised as 'voiced/voiceless' – but in other languages *d* is unmarked – the opposition will then be described as 'tense/non-tense'.

We can take the name of the marked feature as characterising a privative opposition, and refer to '+/−' values e.g. ± voice, ± tense, ± retroflex. With equipollent oppositions each feature is equally marked with respect to the other so that any '+/−' characterisation would be both arbitrary and misleading. Both features have to be named in a bilateral equipollent opposition, it being understood that they do stand in a complementary relation to each other e.g. labial/dorsal.

6.8.1 *Features for place of articulation*

We can first deal with the distinctions between different places of articulation for stops, nasals and laterals. After justifying the oppositions required we will discuss how rhotics, vowels and semi-vowels can be related to them.

The relevant feature oppositions can be set out in table 6.2.

Table 6.2

	d *n* *l*	*rd* *rn* *rl*	*j* *ny* *ly*	*dh* *nh* *lh*	*g* *ŋ*	*b* *m*
± peripheral	–	–	–	–	+	+
± laminal	–	–	+	+		
± retroflex	–	+				
± interdental			–	+		
labial/dorsal					d.	l.

The opposition between apico-alveolars and apico-postalveolars is plainly privative; most languages that show an apical contrast have this neutralised in initial position. The alveolar feature is clearly unmarked; it involves minimal movement from a normal breathing position. Languages with a single apical series have alveolar articulation as the predominant – often, the sole – allophone.

The opposition between lamino-interdentals and lamino-palatals must be regarded as privative for similar reasons. Almost every (perhaps every) Australian language with a laminal contrast has this neutralised in some environments – often syllable-finally, or else after certain vowels. We take the palatal feature as unmarked; it does involve less movement of the tongue from a position of rest than interdental, and the great majority of languages with a single laminal series have predominantly palatal realisation for it. Note, though, that the evidence for which feature is marked is not so strong as for apicals. This opposition is certainly privative in every Australian language in which it occurs, but more detailed investigation could well indicate that palatal is the unmarked feature in some languages, and interdental in others.

The opposition between labials and dorsals, in the peripheral class, appears to be equipollent. Both involve very significant movement of the articulators from a position of rest, and there is no evidence of this opposition being neutralised, in any Australian language. It is thus not appropriate to use '+/−' for the opposition. There is no criterion for choosing one of the feature names as more important than the other; we shall refer to 'labial' and 'dorsal' features, remarking that they are complementary within an equipollent bilateral opposition.

There could be a temptation to 'economise' by using a single feature opposition to distinguish *d*/*rd*, *dh*/*j* and *b*/*g* – the first member of each pair could be '+front' and the second '−front'. Any such treatment is completely invalid. There is no proportion *d*:*rd*::*dh*:*j*::*b* :*g* (or any other permutation). The factors that distinguish between apical, laminal and peripheral series are of a totally different nature and must be treated as such. (Note that *d* is unmarked with respect to *rd*, but *j* with respect to *dh*, whereas no marking can be assigned to *b*/*g*; and so on.)

The opposition between laminals and apicals appears also to be privative. Apical is plainly the unmarked feature – there is less effort involved in touching the tip of the tongue against the alveolar ridge than there is in bringing an area of the blade into contact with palate/alveolar ridge or with both teeth. To confirm the privative nature of the opposition it would be useful to uncover some instance of neutralisation. This is only likely to be encountered in a language with one apical and one laminal series. A single example is known – in Banjalang, from north-east New South Wales, apical and laminal stops contrast initially, but are neutralised between vowels. The single non-peripheral stop in intervocalic position – an 'archiphoneme' that corresponds to both initial *d* and initial *j* – can have apical or laminal articulation; different dialects have different articulatory preferences, but apical and laminal alternants are always in free variation between vowels. (Note, though, that the contrast between non-peripheral nasals, *n* and *ny*, is maintained at all positions in a Banjalang word.) There are also examples of the historical change *ny*>*n*, supporting the conclusion that apical/laminal is a privative opposition with apical the unmarked member (see 8.1, 11.1.3, 12.2.7).

Trubetzkoy classified *b*, *d* and *g* in English as making up a multilateral equipollent opposition; he maintained that there is in English no convincing criterion for opposing two of these sounds to the third. In Australian languages *b* and *g* (and *m* and *ŋ*) do tend to have exactly the same distributional pattern – this was exemplified quite fully in 6.6. Our statements of phonotactics are greatly simplified if we group these sounds together as 'peripherals', opposed to laminals and apicals. Plainly, *g* involves much more significant movement of articulators from rest position than do *d*, *j* (or *rd*, *dh*) – and *b* involves movement of a different sort – suggesting that peripheral should be the marked feature in a privative opposition. There is no possibility of neutralisation to confirm the classification of this opposition as privative – each Australian language has at least two non-peripheral and two peripheral stops and nasals, and neutralisation is only normally possible when there is a single sound in each category. We can thus be less definite about the privative nature of this opposition than we were for ±retroflex, ±interdental and ±laminal.

Our feature description indicates apicals – and particularly apico-alveolars – to be the least marked of the consonants examined so far. They involve minimum movement of the vocal organs from a normal breathing position. The phonotactic and morphophonological behaviour of apicals in many Australian phonologies supports this conclusion.

We mentioned that whereas *r* and *rr* can both be assigned to pA – possibly as allophones of a single phoneme at an early stage, but certainly emerging as separate phonemes by late pA – the distinction between apico-alveolar and apico-postalveolar stops, nasals and laterals evolved at a later stage, in just the western part of the continent. Modern languages which lack retroflex stop, nasal and lateral do exhibit a contrast between two rhotics. This suggests that *r* and *rr* do not fit into the localisation series quite as snugly as do the laterals, *l* and *rl*.

But there are several pieces of evidence indicating that rhotics DO fit into the apical series set up for stops, nasals and laterals. Firstly, we have mentioned that the main factor differentiating the rhotics seems normally to be PLACE of articulation, with the articulation of the alveolar rhotic as a trill and of the postalveolar variety usually as a continuant being a secondary, concomitant factor. The phonetic parameter distinguishing *r* from *rr* appears to be very roughly parallel to that underlying *rd/d*, *rn/n* and *rl/l*. Secondly, there is an alternation *rd*~*r* in certain grammatical environments in Yir-Yoront, for example. Thirdly, there are the historical changes **d>r/V-u* but **d>rr* in all other intervocalic positions for Nyawaygi (6.4.6); the back vowel *u* as conditioning factor in this split reminds us of the conditioning factor we surmised for the original apical split – *rd* after *u* and *d* elsewhere (6.5.2).

As a fourth point, we shall demonstrate in 6.8.2 that *r* shows some of the same 'markedness properties' as *rd*, *rn* and *rl*. In view of all this it does seem appropriate to describe *r* as '+retroflex' and *rr* as '−retroflex', parallel to stops, nasals and laterals.

There are strong reasons, in Australian phonologies, for describing vowels and semi-vowels in terms of some of the same feature oppositions as consonants:

		y	*w*
	a	*i*	*u*
±peripheral	−	−	+
±laminal	−	+	

u and *w* involve raising the back of the tongue (as for *g*, *ŋ*) and also movement of the lips (as for *b*, *m*). *i* and *y* involve movement of the front portion of the tongue (as for *j*, *dh*, *ny*, *nh*, *ly*, *lh*). *a* is – on phonetic and phonological counts – the unmarked vowel, involving virtually no movement of the speech organs from a normal breathing position.

Languages with additional vowels – such as /ɛ/ and /ɔ/ – can have an additional feature specifying 'degree of aperture' (= height of vowel); ɛ will of course be grouped with *i*, and *ɔ* with *u*, with respect to peripheral and laminal oppositions.

Many points of justification can be given for relating semi-vowels to vowels and for placing them both in the same localisation series as stops, nasals and laterals. To quote just four: (i) in a number of languages a sequence /iyi/ or /uwu/ can be realised as a single very long vowel [iii] or [uuu]; (ii) the first segment of ergative inflection *-du* and locative *-da* usually assimilates in place of articulation to a stem-final nasal; in addition, these inflections are *-ju*/*-ja* after -y, in languages which show a stem-final *y*, and *-bu*/*-ba* after *w* in Banjalang (one of the few languages known to have stems ending in *w*); (iii) in Mbabaram there has been a diachronic change whereby *a* in the second syllable of a word was raised to ɛ when the word-initial consonant was *j*, or *y* (or, presumably, *ny*) and to *ɔ* when it was *g*, *ŋ* or *w* (see 7.1.2); (iv) the changes *NH*>*ŋ*/*-u* and *ŋ*>*NH*/*-i* involved in shifts in pronominal forms **NHu*>*ŋu*, **ŋin*>*NHin* (11.2, 11.1.4); there are many instances of historical changes involving *j*>*y*, *dh*>*y*, *ny*>*y*, *nh*>*y*, *g*>*w*, *ŋ*>*w* and *b*>*w* (some examples are quoted in chapters 11 and 12, and also in 6.8.3).

It is not necessary to classify vowels and semi-vowels according to the remaining consonant oppositions – ±retroflex, ±interdental and dorsal/labial. *u* and *w* involve both labial and dorsal articulation; the examples given in the last paragraph show that they are related to both of these consonant series. For *y* and *i* the blade of the tongue is raised; it does not touch any passive articulator and so these sounds could not be described as either 'interdental' or 'palatal'. Vowels and semi-vowels appear to be equally strongly related to each of the laminal series, in double-laminal languages. Finally, *a* is the unmarked vowel and apicals are the unmarked consonants only because they are NOT specified for the positive features '+peripheral' or '+laminal'. Each involves minimum movement of the speech organs FOR THAT MANNER OF ARTICULATION; but there is no articulatory similarity between *a* and *d*/*n*/*l* and no way in which the '±retroflex' opposition could be applicable to open vowels.

6.8.2 *Markedness and phonotactics*

Our feature description yields an important generalisation concerning the phonotactic distribution of consonants:

> The consonants which are most marked, in terms of 'place of articulation' features, tend to occur in syllable-initial position, and the least marked ones syllable-finally.

Peripherals are the most marked consonants, then laminals, with apicals the least marked. For all Australian languages peripheral stops and nasals are the most frequent word-initial segments, followed by laminals; most languages have only a few words beginning with apicals, and some have none at all. Similarly, there are always more words beginning with peripheral *w* than with laminal *y*. The most marked of the two rhotics, *r*, tends to occur word-initially whereas unmarked *rr* does not.

An apical opposition is in most languages neutralised in initial position, the most common articulation being retroflex. It might be expected that the unmarked feature, apico-alveolar, would occur in a position of neutralisation. We can explain the preference for retroflex in this case as an instance of the most marked feature being preferred initially.

Syllable-finally we always encounter apical nasals and laterals and *rr* – these are the unmarked consonants from their classes. Next most common are laminals and least common finally are the most marked segments of all, the peripherals. Laminal semi-vowel *y* ends syllables in many eastern languages but *w* is known to occur finally in just two languages from the south-east, Banjalang and Gumbaynggir, and a few from Arnhem Land. A laminal contrast is neutralised syllable-finally, and it is the unmarked feature that occurs here.

In most languages there must be a syllable-initial consonant but there need not be any consonant to close the syllable. This is surely related to the preference for marked consonants initially and for unmarked consonants – involving a minimum of articulatory movement from rest position – finally.

When Australian languages take over loans from English these must be recast into the native phonotactic pattern. In particular, words which in English begin with a vowel have to be assigned an initial consonant; this is usually *w* before *u*, *y* before *i* but in some languages *ŋ* before *a* e.g. Dyirbal *ŋarrinyji* 'orange', *ŋayan* 'iron', *ŋaŋgija* 'handkerchief'. Why should *ŋ* be supplied in these circumstances? There are two possible reasons: (i) it is a peripheral consonant, one of the class that is most marked and thus preferred in initial position; and (ii) *ŋ* appears to be – in terms of sonority and other phonetic features – closer to a vowel than any other consonant (see Trubetzkoy 1969:233).

The generalisation connecting markedness – which was recognised on totally different grounds – with phonotactic position applies only to oppositions connected with 'place of articulation'. There are less drastic phonotactic divisions in terms of manner of articulation – for instance, nasals are frequent in initial and in final positions in all languages – and markedness of manner feature does not correlate with structural position in the same way.

6.8.3 *Features for manner of articulation*

It seems most appropriate to deal with different 'manners of articulation', in Australian languages, in terms of the feature oppositions shown in table 6.3.

Table 6.3

	stop	lateral	rhotic	nasal	semi-vowel	vowel
syllabic nucleus/margin	m.	m.	m.	m.	m.	n.
±obstruction	+	+	+	+	–	
nasal/oral	o.	o.	o.	n.		
±partial passage	–	+	+			
±rhotic	(–)	–	+			

It is first necessary to distinguish vowels from consonants, in terms of the opposition 'syllabic nucleus/syllabic margin'. This works in terms of the phonotactic FUNCTION of a sound, rather than its intrinsic phonetic nature; semi-vowels appear to be phonetically very similar to corresponding vowels but are functionally quite distinct (more discussion of this will be found in 6.8.4). A vowel constitutes the essential peak of a syllable; it can be flanked by initial and/or closing consonant(s), but these are not essential to its articulation. Because of the different functional slots filled by vowels and by non-vowels there is no possibility of neutralisation. The 'nucleus/margin' opposition must be regarded as equipollent, in the absence of any evidence that it has a privative nature.

Next we distinguish between those consonants whose articulation involves some type of obstruction to the free passage of air in the mouth and those which permit unimpeded passage; '±obstruction' serves to distinguish semi-vowels from the remaining consonants. On phonetic grounds semi-vowels are clearly unmarked; this is supported by the types of diachronic change involved. There are plentiful examples of each other type of consonant leniting to a corresponding semi-vowel, but almost no instances of change in the other direction. Between proto-Ngayarda and Yinyjibarnrdi there are instances of **b>w*, **g>w*, **j>y*, **dh>y*, **r>y*, for instance; **l>y* and **rr>y* are attested from several languages in the northern part of the Cape York Peninsula (7.1.1); in chapters 11 and 12 we mention instances of **ŋ>w*, **ny>y* and **nh>y*; and so on.

The nasals are clearly contrasted with all other consonants that involve an oral obstruction; for nasals there is unimpeded passage of air through the nose. Some languages have a distinction between nasalised and non-nasalised vowels and the opposition there is surely privative. But there are no phonetic grounds for considering a stop – with the air building up behind an oral obstruction, which is then released – being unmarked with respect to a nasal – where the blocked oral cavity acts as a resonance chamber for air passing up the larynx and through the nose – or vice versa. There are in addition no instances of neutralisation between nasal and non-nasal sounds, and almost no diachronic changes involving nasal and stop, lateral or rhotic. We are bound to conclude that 'oral/nasal' is an equipollent opposition for Australian languages.

Between the remaining consonant classes there are definite oppositions stop/lateral, lateral/rhotic and also stop/rhotic. These can conveniently be described in terms of the basic features '±partial passage' and '±rhotic'. Laterals and rhotics are linked together, and opposed to stops, in that they have closure of some part of the cross-section of the tongue with the roof of the mouth, and allow passage of air over the remaining part of the tongue. We can then take the side closure of rhotics, which permits air to pass through a groove in the centre of the tongue, as distinguishing them from laterals.

It can be argued that if an obstruction is to be provided in the mouth, then it is most straightforward to bring the whole cross-section of the tongue in contact with the roof of the mouth, so that stops take the unmarked value in the privative opposition '±partial passage' (it could equally well be called '±partial closure'); and that less effort is involved in bringing the centre of the tongue up from rest position than in bringing up the two sides, making laterals unmarked with respect to rhotics in the opposition '±rhotic' (alternative names could be '±side closure' or '±central passage of air'). Our characterisation of these two basic oppositions as privative is borne out by instances of neutralisation – *d*/*l* are neutralised in initial-position in Yaygir, *d*/*rr* and *rd*/*r* are neutralised (and alternate freely) in word-final position in Kalkatungu, and *l*/*rr* are neutralised between all vowels except *i*(*i*)–*i*(*i*) in Gumbaynggir, for instance.

The markedness value for '±partial passage' receives further justification from attested historical changes. There are examples of **l*>*d* in some languages from New England and from the northern tip of Cape York, and *l*>*d*, *rl*>*rd*, *ly*>*j* in Yinyjibarnrdi; this involves '+partial passage'>'–partial passage', with the constant concomitant feature '–rhotic'. For '+rhotic' there are changes attested in both directions: **rr*>*l* in Dyirbal, **l* >*rr* in Yinyjibarnrdi and Arabana, while synchronic dissimilation in Yidiny involves both *l*→*rr* and *rr*→*l*. That rhotic/stop is a privative opposition – contrasting '+partial passage, +rhotic' with '–partial passage, –rhotic' – can be seen from changes *d*>*rr* in Dyirbal, in Jabugay and also in Nyawaygi (6.4.6), and in *rr*>*d* in Uradhi (7.1.1).

There is one additional phonetic factor linking *rr* to *d* (but not *r* to *rd*). The alveolar rhotic usually involves trilled articulation – the tongue is vibrated so that it intermittently forms a complete closure with the roof of the mouth (like a stop), with air escaping through the central tongue groove between these closures. We could thus add the non-defining feature '+complete closure', with the value '+' applying to stops and *rr* and value '–' to laterals and *r*. This would serve to explain the close connection between *d* and *rr*.

Table 6.4. *Feature specification of phonemes, in a maximal system.*

	d	*n*	*l*	*rr*	*rd*	*rn*	*rl*	*r*	*j*	*ny*	*ly*	*dh*	*nh*	*lh*	*y*	*g*	*ŋ*	*b*	*m*	*w*	*a*	*i*	*u*
syllabic nucleus/margin	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	n.	n.	n.
±obstruction	+	+	+	+	+	+	+	+	+	+	+	+	+	+	−	+	+	+	+	−			
±peripheral	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	+	+	+	+	+	−	−	+
±laminal	−	−	−	−	−	−	−	−	+	+	+	+	+	+	+						−	+	
±retroflex	−	−	−	−	+	+	+	+															
±interdental									−	−	−	+	+	+									
labial/dorsal																d.	d.	l.	l.				
nasal/oral	o.	n.	o.	o.	o.	n.	o.	o.	o.	n.	o.	o.	n.	o.		o.	n.	o.	n.				
±partial passage	−		+	+	−		+	+	−		+	−		+		(−)		(−)					
±rhotic	(−)		−	+	(−)		−	+	(−)		(−)	(−)		(−)		(−)		(−)					

6.8.4 *Summary*

We can now recapitulate the ten feature oppositions set up for Australian languages. The twenty-three phonemes of a regular 'maximal' system have feature values shown in table 6.4. Parentheses include features that are not strictly needed to distinguish one phoneme from the others.

Rhotics appear only in the apical series; the opposition '±rhotic' is only relevant following features '−peripheral' and '−laminal'. Laterals occur only in apical and laminal series; the opposition '+partial passage' is thus only relevant following '−peripheral'.

In languages west of the Gulf of Carpentaria a lateral occurs in each non-peripheral series, according to the feature description we have given. But eastern languages generally have a single lateral; it is by no means obvious that this must be specified as '−laminal' and '−retroflex' ('+retroflex' is needed in eastern languages to deal with the opposition *rr*/*r*). Diachronic changes **j*>*l* and **l*>*y* in Cape York and in other eastern areas suggest that this *l* could be taken as simply '−peripheral, +partial passage, ...', effectively corresponding to both apical and laminal laterals in the west.

Semi-vowels *w*, *y* and vowels *u*, *i* differ only in the feature choice 'syllabic nucleus/margin'. They are phonetically almost identical but differ functionally. This is nicely displayed by the operation of the metathesis rule in Awngthim. From *-*iCa* we get -*Cia* which is interpreted as -*Cya*, but from *-*aCi* we get -*Cai* which is interpreted as -*Cay*. Similarly *-*uCa*>-*Cwa*, *-*aCu*>-*Caw* and **iCu*>-*Cyu*, *-*uCi*>-*Cwi*. This rule seems to be: in a sequence of two non-identical vowels produced by the metathesis rule the first is interpreted as the corresponding semi-vowel if there is one, otherwise the second vowel is interpreted as the corresponding semi-vowel. (A fuller discussion of this example, and of metathesis in Australian languages generally, is in 7.1.3. Note that there is no evidence of metathesis in Awngthim where two vowels are identical, so that we do not get sequences of -*Caa*.)

Our feature description provides a straightforward explanation of why there is no third semi-vowel, corresponding to *a*. Semi-vowels have no positive feature amongst the manner oppositions: they are '−obstruction' and, if the other features are applied to them, would merit '−partial passage' and '−rhotic' and 'oral'. *w* is '+peripheral' and *y* '+laminal'; if there were a semi-vowel in the apical series it would receive '−' specification for each place opposition. While a syllable

NUCLEUS can be negatively marked with respect to every relevant opposition – as *a* is – it appears impossible to get a syllable MARGIN that does not have some positive specification.

Many languages have significant vowel length, requiring a privative bilateral opposition '±long'. This is often neutralised in non-initial syllables, where just the unmarked feature '−long' occurs.

7

Phonological change

[This chapter surveys the sweeping phonological changes that have occurred in a number of languages, particularly those in the Northern Paman subgroup, which have been described by Kenneth Hale. These languages show fricatives and other consonants and vowels that fall outside the scope of the practical orthography which we employ in the remainder of the book. In 7.1 I follow Hale's use of phonetic symbols. Note particularly that he employs the voiceless stop symbols *p*, *t*, *k*; it is important to keep in mind that *p*/*b*, *t*/*d* and *k*/*g* are usually interchangeable. Hale also used *tʸ* for the lamino-palatal stop (*j*/*tj*).]

In a seminal survey of Australian linguistics published twenty years ago, Capell remarked that 'the languages of the Cape York Peninsula show many unAustralian features'. We can exemplify by quoting the forms for 'dog' in four languages from the northern part of the peninsula:

Uraði	/utaɣa/	'dog'
Mpalitʸan̪	/twa/	
Ntʳaˀŋit̪	/uˀa/	
Mbiywom	/two/	

It will be seen that these forms, and also the language names, are quite different from the typical Australian pattern described in the last chapter. Uraði has fricatives – dorso-velar /ɣ/ and laminal /ð/ – and it allows words to begin with a vowel. The other languages show monosyllables, initial clusters /tw-/, /mp-/ or /ntʳ-/, the glottal stop /ˀ/, a contrastive mid-vowel /o/, and words ending in the stop /t̪/.

Kenneth Hale did fieldwork on these languages around 1960 (the forms and language names given here are taken from Hale's work). In one of the most spectacular achievements of Australian historical linguistics, he showed how the Cape York languages have developed, by quite regular historical changes, from a proto-language of the normal Australian type. Hale suggested that proto-Cape-York was similar to modern languages like Warrgamay in its phonemes, phonotactics, and so on.

It is scarcely obvious at first sight that the four forms for 'dog' are genetically related. Hale was able to demonstrate that they all derive from a proto-form */kutaka/ (=*/gudaga/). Languages just south of the Cape York area have precisely these forms – Yidiny shows *gudaga* and Dyirbal *guda* 'dog', for instance. We will over the next few pages explain and give further exemplification of the changes that produced the four modern forms.

The northern Cape York languages have been described as 'initial dropping'. They have all lost C_1 from an original $C_1V_1(V_1)C_2V_2 \ldots$; in some languages C_1 was dropped from all words but in others – such as Uraði – it has only been lost from SOME words. In addition, a short V_1 is often dropped and a long V_1 shortened. But in many cases there was allophonic variation at C_2 or V_2 that was conditioned by a certain class of sounds at C_1 and/or V_1; when C_1V_1 was lost this erstwhile phonetic distinction at C_2 or V_2 became phonologically significant. 'Initial dropping' produced shorter words, but increased the number of consonant and vowel phonemes that could occur at C_2 and V_2. Details of these changes are given below.

After Hale's incisive reconstruction of the northern Cape York systems, there were left just two languages that appeared 'unAustralian' and were thought perhaps not to belong to the Australian family – they were known as 'Barbaram', spoken at the southern end of the Cape York Peninsula, and 'Anēwan', from the highlands of New England. N. B. Tindale had, in 1941, mentioned that 'Barbaram . . . is characterized among other things by many monosyllabic words with consonantal endings . . . In words of two or more syllables, principal stress is often placed on the second syllable . . .' In 1964 I found, after considerable search, what turned out to be the last speaker of Mbabaram (to give a more exact representation of the name). One of the first words obtained was /dɔg/ for 'dog'! Hale later pointed out that this too is a reflex of */gudaga/, involving raising of the second /a/ to /ɔ/ after an initial velar, then loss of initial C_1V_1 and loss of the final vowel. Other examples were found of each of these changes, showing them to be as regular as the changes described for languages further north.

There was now only Anēwan unexplained. It has some words commencing with a vowel e.g. *ila* 'eye', and some with a consonant cluster – *mbunya* 'kangaroo' and *gyaya* 'food'; no one had been able to perceive any grammatical and lexical cognates between Anēwan and neighbouring languages such as Gamilaraay to the west. Then in 1973 Terry

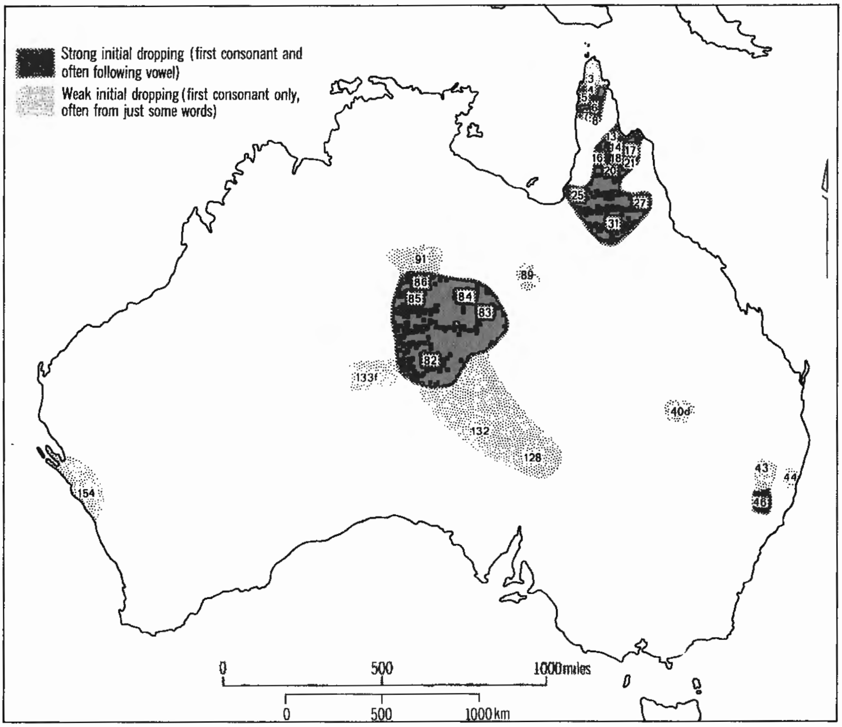
Crowley undertook a thorough comparison of Nganyaywana (to give a more accurate spelling of the language name) and its easterly neighbours, on the New South Wales coast. He found around one hundred cognate sets, including:

Gumbaynggir /miil/	Nganyaywana /ila/ 'eye'
Dyangadi /wambuny/	,, /mbunya/ 'kangaroo'
,, /wigay/	,, /gyaya/ 'food'

There has again been 'initial dropping'. The first consonant, C_1, has dropped from all words. Some V_1 metathesised with C_1 (more will be said on this in 7.1.3) but all short V_1 were lost and long V_1 shortened. Finally, any word that did not end in a vowel had a final *-a* appended.

It is remarkable that 'initial dropping' has applied in several different regions, to languages that are not closely related. Hale calls the languages of Cape York 'the Paman group' since they almost all have a reflex of **pama* 'person' or 'man'. Initial dropping has applied to Northern Paman (Uraði, Mpalitʸan̪, Ntʳaʔŋit̪, Mbiywom and half-a-dozen other languages) and to a variety of more southern Paman languages (these include Kurtjar, Kuku-Thaypan and Mbara, as well as Mbabaram, to cite some genetically rather distant languages) but not to Umpila and other languages of the intervening region. It has applied to Nganyaywana from New South Wales, to a group of closely related languages from the Arandic subgroup in Central Australia, and also – to a lesser extent – to Adnyamadhanha in South Australia. Arabana and other South Australian languages, that lie between Arandic and Adnyamadhanha, have dropped C_1 from just a few words; the dialects of the Western Desert language which border Arabana have dropped initial *y* from many words (but this change has not applied in other Western Desert dialects). There has also been limited initial dropping in Nhanda from Western Australia, Yaygir, from the south-east coast, Kalkatungu, from north-west Central Queensland, and one or two other isolated dialects or languages. The regions in which initial dropping has taken place are shown in map 6.

We can enquire WHY changes of similar type have taken place quite independently in such widely scattered corners of the continent. Most Australian languages stress the first syllable of a word. It is likely that in initial-dropping areas there appeared a preference for stress on the second syllable; this then led to dropping of the first, unstressed syllable and related changes such as metathesis, vowel umlaut, development of


Strong initial dropping (first consonant and often following vowel)
Weak initial dropping (first consonant only, often from just some words)
3
4
5
6
7
8
13
14
16
17
18
20
21
25
27
31
91
86
85
84
83
82
89
133f
132
128
40d
43
44
46
154
0
500
1000 miles
0
500
1000 km

Map 6. Regions in which initial dropping has taken place. Key as for map 2

prestopped nasals and/or fricatives, and so on. In the next sections we outline some of these recurrent developments.

It may be possible to link the areas in which initial dropping occurred with sociocultural parameters. Thus, Barry Alpher has shown that the northern and eastern limits of the four-section system in the southern part of the Cape York Peninsula coincide almost exactly with the limits of initial dropping.

7.1 Initial-dropping languages

7.1.1 *Consonantal changes*

Proto-Paman (the putative ancestor Hale suggests for the Cape York languages) had a contrast between long and short vowels in initial syllables, as languages like Warrgamay do today. It appears that in Uraði stops had fricative allophones after an initial syllable with a long vowel (or after two syllables each with a short vowel), but not after a single short vowel. But then the length contrast was simply dropped and the distinction between fricatives and stops became phonologically contrastive; the fricatives now had the status of separate phonemes. Uraði has three fricatives – bilabial /β/, lamino-interdental /ð/, and dorso-velar /ɣ/ (there are no fricatives corresponding to the other two stops – lamino-palatal /t^y/ and apical /t/).

We can take the structure of a word in proto-Paman as $C_1V_1(V_1)C_2V_2(C_3V_3)$ . . . where C_2, C_3 can each be one or a sequence of two consonants. In Uraði, C_1 has dropped from MOST words (and lenited to a semi-vowel in others). The length contrast at V_1 has been quite lost. Modern /ɣ/ reflects an original /k/ or /ŋk/ at C_2 after a long V_1, or at C_3 after any V_1 and V_2; /k/ and /ŋk/ remain unchanged when V_1 was short. Thus:

*/piiku/ > /wiɣu/	'rib'
*/t^yuku/ > /yuku/	'tree'
*/ɲuuŋka-/ > /uɣa-/	'to smell'
*/t^yaŋka-/ > /aŋka-/	'to laugh'
*/kutaka/ > /utaɣa/	'dog'

/ð/ developed from /th/ or /nhth/ and /β/ from /p/ (or, presumably, /mp/) under the same conditions.

In most of the Northern Paman languages nasals at C_2 and C_3 positions remained unchanged. Nasal-plus-stop clusters sometimes gave a fricative after a long vowel but remained unchanged after a short vowel (Uraði is an example of this kind of change). There was a somewhat different development in Linŋit̪iɣ; here a nasal was dropped immediately before a stop ONLY IF C_1 was a nasal (see also 7.5):

*/ŋuŋku/ > /ko/	'there'	but	*/puŋko/ > /ŋko/	'knee'
*/ŋantu/ > /t^ro/	'where'		*/wuntu-/ > /nt^ro-/	'to seek'

It is in languages from the southern Paman region that medial nasals have undergone radical changes – sometimes becoming a prestopped nasal */n/ > /^{d}n/ (where the nasal has a definite 'release', with delayed nasal onset), sometimes a prenasalised stop (*/n/ > /^{n}d/) and in other cases a simple stop (*/n/ > /d/). These changes were conditioned by the consonant at C_1 in some languages and by whether V_1 was short or long in others (or by a combination of these factors); contrastive vowel length has been dropped from all modern languages.

In the southern Paman language Olgolo a nasal at C_2 became prestopped if both (i) C_1 was a stop or *w*, and (ii) V_1 was short:

*/bama/ > /a^{b}ma/	'man'	but	*/ŋama/ > /ama(ŋarr)/	'mother'
*/wuna-/ > /u^{d}na-/	'to lie down'		*/biiɲa/ > /iɲa/	'aunt'

Here C_1 has dropped from all words; V_1 has lost its length contrast but has not dropped – in modern Olgolo every word begins with a vowel. It is interesting to note that an almost identical change gave rise to prestopped nasals in the Arandic languages of Central Australia. (In Arabana, Arandic's southern neighbour, spoken in South Australia, nasals in C_2 position have prestopped allophones after a non-nasal at C_1 and in addition laterals are prestopped where there is ANY consonant at C_1. But initials have not dropped in Arabana, save for the loss of /ŋ-/ in some words, so that prestopped nasals and laterals do not (yet) have the status of distinct phonemes. Arabana shows an intermediate stage in the development of prestopped phonemes; the next stage is exhibited by Aranda and Olgolo, which have dropped all C_1's, establishing a phonological contrast between plain nasals and prestopped nasals.)

We can exemplify the development of nasals in other southern Paman languages by examining reflexes of the common form /bama/. In Bariman Gutinhma it is reflected as /ba/ – here a nasal becomes a stop after an erstwhile short vowel, but maintains its nasality after a long vowel (e.g. */ɲiina-/ > /ina-/ 'to sit'); short vowels at V_1 were dropped, long vowels were shortened. In Lama-Lama, on the other hand, the descendant of */bama/ is /^{m}ba/, with a prenasalised stop.

There have been a number of other changes in the development of Northern Paman languages and southern Paman languages, some of them conditioned by the form of the original initial syllable. In Uraði the trill */rr/ in C_2 position became an apico-alveolar stop /t/ after short V_1 but appears to have remained a trill /rr/ after long V_1. (This contrasts with the development of stops – they become fricatives after a long vowel and remained unchanged after SHORT V_1.)

Other changes in these languages appear to be unconnected with the loss of initial syllable and of distinctive vowel length. Thus, in Linŋit̪iɣ final *l* became *y*, but *l* remained unchanged in intervocalic position; in Mbiywom, medial trill *rr* became *y*; and so on.

An apico-alveolar stop with trilled release, /t^{r}/, contrasts with a plain apico-alveolar stop /t/ in some Northern Paman languages. In Yinwum, for example, /nt/ became /nt^{r}/ if both preceded and followed by /a/ but remained /nt/ otherwise:

*/wanta-/ > /ntʳa-/ 'to put, leave' */yinta-/ > /nti-/ 'to spear'

In addition */r/ became /tʳ/ when flanked by /a/'s but changed to /t/ in other environments:

*/tʸaara/ > /atʳa/ 'tongue' */waari/ > /ate/ 'who'

(The changes */a/ > /i/ and */i/ > /e/ in Yinwum are discussed in the next section.) In Linŋit̪iɣ /nt/ yielded /tʳ/ or /ntʳ/, as seen in the examples given above to illustrate nasal dropping.

Some Paman languages have a glottal stop phoneme, /ʔ/. (This is, of course, an exception to our general statement that in the Australian family every stop will have a corresponding nasal.) The glottal stop has arisen in quite different ways in languages from this region. Amongst the Northern group, Ntʳaʔŋit̪ had */t/ > /ʔ/, hence the modern form /uʔa/ 'dog'; in Linŋit̪iɣ we find */r/ > /ʔ/ e.g. */waari/ > /aʔi/ 'who'; Aɲut̪imri has */r/ > /ʔ/ also */t/ > /ʔ/ – this, together with metathesis (see 7.1.3), gives the modern form /ʔwa/ for 'dog'. Amongst the non-initial-dropping middle Paman languages, Yir-Yoront had */g/ > /ʔ/ in non-initial position, and in Umpila all of */r/ > /ʔ/, */d/ > /ʔ/ and */b/ > /ʔ/ are attested, each in certain environments.

7.1.2 *Changes affecting vowel systems*

Although initial-dropping languages have lost the length contrast that originally operated at V_1 position, most of them have increased the system of vowel phonemes at V_2 and later slots. Vowels at V_2 originally had allophonic variants conditioned by the quality or length of the vowel at V_1 and/or by the consonant at C_1. As C_1 has been deleted and V_1 has either been omitted altogether or has lost its length distinction, so these allophones have emerged as distinct phonemes.

The Northern Paman tongue Yinwum, for instance, shows the following changes:

[i] /a/ at V_2 > /i/ if C_1 was a laminal (stop, nasal or semi-vowel) and V_1 was short e.g. */tʸampa-/ > /mpi-/ 'to give', */yana-/ > /ni- 'to go'.

[ii] /u/ at V_2 > /e/ if C_1 was a laminal and V_1 was also /u/ e.g. */tʸuku/ > /ke/ 'tree', *tʸuŋku/ > /ŋke/ 'black'.

[iii] /u/ at V_2 > /yu/ if C_1 was a laminal and V_1 was /a/ e.g. */tʸaru/ > /tyu/ 'foot', */yapu/ > /pyu/ 'younger brother'.

[iv] /i/ at V_2 > /e/ if V_1 was /a/ or /aa/ and C_2 was non-laminal e.g. */kami/ > /me/ 'mother's mother', */ŋali/ > /le/ 'we (dual)', */wari-/ > /te-/ 'to dig' BUT */ŋaɲi/ > /ɲi/ 'we'.

Yinwum thus has a system of four vowels – /i/, /e/, /a/ and /u/, whereas its ancestor had three vowels, together with a length distinction in initial syllables.

Mbabaram, from the southern Paman area, has gained two mid vowels, /ɛ/ and /ɔ/. Both derive from /a/ at V_2 position and are conditioned by the original consonant at C_1:

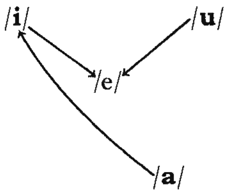
[i] /a/ at $V_2 >$ /ɛ/ if C_1 was a laminal (stop, semi-vowel or, presumably, nasal).
[ii] /a/ at $V_2 >$ /ɔ/ if C_2 was a dorsal (stop, nasal or semi-vowel).

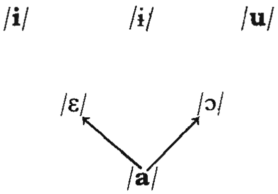
Initial C_1 and short V_1 have dropped; long V_1 has been replaced by /a/ (whatever the quality of the original vowel). Thus:

	*/jiibar/ > /abɛr/	'south'	*/jawa/ > /wɛ/	'mouth'
	*/gudaga/ > /dɔg/	'dog'	*/ŋaba-/ > /bɔ-/	'to bathe'
but	*/bamba/ > /mba/	'belly'	*/naga/ > /ga/	'east'

Mbabaram has dropped the final vowel from some longer forms like /*gudaga/ – this is a sporadic, rather than a regular change. (And it also has a sixth vowel – high central /ɨ/ – whose historical origins are still under investigation.) Discussion of how these changes have affected the form of verb roots in Mbabaram is in 12.2.5.

We can diagram the historical development of the four-vowel system for Yinwum and of five of the Mbabaram vowels. The original three vowels for each proto-language are printed in bold type:


YINWUM


MBABARAM

In each language the original vowels retain their quality in SOME words (where the conditions above are not satisfied).

Other Paman languages show different vowel augmentations. Mbiywom, for instance, has at least five vowels, with modern /o/ deriving partly from */u/ and partly from */a/, modern /e/ from */i/ and from */a/, and modern /i/ from */i/ and from */a/ (this last as in Yinwum). In Linŋit̪iɣ */a/ has split into /a/ and /æ/ whereas */u/ had given modern

/u/ and /o/, under conditions that are not fully understood.

The maximum Australian vowel inventory is reported by Terry Crowley for the Northern Paman language Aŋut̪imri. There are four significant heights for front unrounded vowels – /i/, /e/, /æ/ and /a/; each also exists in a long form – /ii/, /ee/, /ææ/ and /aa/ – and in nasalised form – /ĩ/, /ẽ/, /æ̃/ and /ã/. There are also back vowels /u/, /uu/ and /o/, and front rounded /ü/, making a sixteen-term system. (It is possible that /ö/ is also a contrastive vowel phoneme, making seventeen in all.) Some of these vowels have been produced by metathesis, described in the next section; the origin of others is not yet understood.

Initial dropping has led to the augmentation of vowel systems only in the Northern Paman and southern Paman areas. Nganyaywana, in New South Wales, has retained the original three-vowel system. And it appears that some members of the Arandic family, in Central Australia, can be considered to have just two contrastive vowel phonemes – open /a/ and close /ə/, the latter with [i] and [u] as allophones in appropriate environments (6.3).

7.1.3 *Metathesis*

Initial-dropping languages can all lose C_1, and often drop a short vowel from V_1 position. But there are circumstances in which a reflection of short V_1 can be included in the modern form of the word, BETWEEN C_2 and V_2. Consider these developments in Mpalitʸan̪:

*/kuta/ > /twa/ 'dog' */ŋula/ > /lwa/ 'by and by'

The semi-vowel /w/ is included between C_2 and an /a/ at V_2, if V_1 was /u/.

This appears to be an instance of metathesis – a /u/ at V_1 changes place with a following C_2 i.e. */uC_2/ > /C_2u/. Then the /u/ becomes a semi-vowel before the syllabic vowel at V_2. Note that in Mpalitʸan̪ the vowel at V_1 is generally retained if it is NOT metathesised e.g. */pipi/ > /ipi/ 'water'.

Some languages – the southern Paman Mbabaram, in addition to Northern Paman Mpalitʸan̪ – only metathesised /u/ and then only with certain values of V_2. In others both /u/ and /i/ can be reflected as semi-vowels between C_2 and V_2; Yinwum is a language of this type:

	*/kuna/ > /nwa/	'faeces'	*/kuŋka(r)/ > /ŋkwa/	'north'
	*/tʸipa/ > /pya/	'liver'	*/ɲilu/ > /lyu/	'he'
but	*/ŋana/ > /na/	'we all'	*/papi/ > /pe/	'mother's father'

In Yinwum, and in most other Northern Paman languages, V_1 is lost whether or not it is reflected by a semi-vowel between C_2 and V_2. This could be described as (i) metathesis of some V_1 with C_2; and then (ii) dropping of any V_1 remaining in initial position. But it might be more plausible to suggest that a /w/ or /y/ onset developed for certain V_2 when V_1 was /u/ or /i/; and that all V_1 then dropped, whether or not there was a V_2-onset that reflected their quality. That is:

*/kuna/ > /una/ > /unwa/ > /nwa/ 'faeces'
*/ŋana/ > /ana/ > /na/ 'we all'

We are suggesting that the historical process might have been COPYING of /u/ or /i/ onto V_2 and then DELETION OF ALL V_1, rather than METATHESIS of some V_1 and then DELETION OF THE REMAINDER.

In some languages all types of V_1 may be, effectively, metathesised. Since there is no semi-vowel corresponding to /a/ it is V_2 that must be reduced to a syllable-closing semi-vowel if V_1 was /a/ (see the discussion in 6.8.4). Thus the Northern Paman language Awŋt̪im shows:

*/ŋali/ > /lay/ 'we dual' */ŋatʸu-/ > /t̪aw-/ 'I' (oblique form)

in addition to

*/pinta/ > /ntʳya/ 'arm' */mulir/ > /lwið/ 'tooth'

There is a restriction on metathesis in Awŋt̪im, however. V_2 must be different from V_1; if not, there is simply loss of V_1:

*/puŋku/ > /ŋku/ 'knee' */pipi/ > /pi/ 'water'
*/pama/ > /ma/ 'person' */tʸaŋka-/ > /ŋka-/ 'to laugh'

Mbiywom goes one further and shows metathesis even when V_1 and V_2 have the same value (but only when V_1 is /u/ or /i/, not when it is /a/):

*/puŋku/ > /ŋgwu/ 'knee'

In Mpalitʸan̪ a long vowel at V_1 does not undergo metathesis, but is simply shortened – */puula/ > /ula/ 'father's father'. But in the other languages mentioned a long vowel will be reflected by a semi-vowel or vowel after C_2, following the pattern of the corresponding short vowel. Thus in Yinwum:

*/puula/ > /ulwa/ 'father's father',
*/tʸiiparr/ > /ipya/ 'south'

The original long vowel at V_1 is reflected doubly in modern form – by a short vowel in the V_1 slot and by /w/ or /y/ following C_2 – providing support for our hypothesis that the diachronic changes were copying of V_1 onto V_2 and then reduction or deletion of V_1, rather than simply metathesis. Long vowels which do not satisfy the conditions for metathesis are of course shown just as short V_1 in modern forms: */kaaway/ > /awar/ 'east' in Yinwum.

All the metatheses described so far merely insert a semi-vowel before or after V_2. But in Aŋut̪imri we find that a sequence of two vowels after C_2, resulting from metathesis, develops into a new vowel part way between the two original sounds in quality. Thus */C_2ai/ > /C_2æ/, */C_2ia/ > /C_2e/, both of */C_2au/, */C_2ua/ > /C_2o/, and both of */C_2ui/, /C_2iu/ > /C_2ü/. For example:

*/kali-/ > /lai-/ > /læ-/	'to go walkabout'
*/paŋkul/ > /^{n}kauy/ > /^{n}koy/	'wallaby'

Awŋt̪im and Aŋut̪imri are in fact dialects of the same language; they have undergone similar changes but these have progressed further in Aŋut̪imri (as is shown by the name itself, presumably resulting from a change *awŋ-* > *aŋu-*).

7.1.4 *General remarks*

The suggestion has been made that the extensive phonological developments in Cape York languages are due to New Guinea influence. Very little can be said in support of this position. The languages that show consistent initial dropping and the greatest change in consonant and vowel systems are actually encountered just below the tip of Cape York. Uraði and other languages at the northern extremity of Cape York have undergone less change – C_1 has been dropped from some words only and V_1 retained in all instances (although distinctive vowel length has been lost). The Western Torres Straits language, which intervenes between the Paman group and New Guinea, has undergone none of the changes we have been documenting – it has a phonotactic structure that accords fairly well with the pattern described in the last chapter (and see 8.3). If there had been any influence from the north – say, New Guinea fricatives triggering the development of Paman fricatives – it would surely not have passed over the Torres Straits.

There is also the fact that developments of an identical type have occurred in Central Australia. These are certainly independent changes – there are relatively few cognates between languages from Cape York and from the centre. It does seem, in fact, that the branches of the Australian family have, by virtue of their phonological system and phonotactic structure, a propensity for change in a certain direction, and that this has been independently manifested at several places in the continent.

Aranda and related languages such as Kaititj and Alyawarra have undergone the same kinds of changes as the Northern Paman and southern Paman groups. Initial C_1 and V_1 have been dropped, and there are also well-attested instances of *u*-metathesis. Compare forms from two languages from the centre – the phonologically normal Warlpiri and its initial-dropping neighbour Kaititj:

Warlpiri *ngumparna* Kaititj *mpwərnə* 'wife's brother'
purlka *ərlkwə* 'old man'

But there are also some examples of a /w/ between C_2 and V_2 reflecting not /u/ at V_1 but an original /w/ at C_1:

Warlpiri *wilypiri* Kaititj *əlypwərə* 'hollow of a tree'

The same types of extensive change have applied in a solitary language from New South Wales, Nganyaywana, which is separated by 1,000 miles from Central Australia, and from the Cape York initial-dropping groups. C_1 and short V_1 are always dropped, long V_1 is shortened, and /u/ or /i/ at V_1 will metathesise with certain C_2 so long as V_2 has a different value from V_1-:

*/wigay/ > /gyaya/ 'food' */gugaŋa/ > /gwaŋa/ 'child'
*/dimin/ > /mina/ 'nits' */ŋaanaŋ/ > /anaŋa/ 'who'

One difference between the initial-dropping areas is in treatment of the ends of words. Some languages of the Paman group often drop off a final vowel, so that many words now end in a stop. Proto-Arandic originally had words ending in *a*, *u* or *i* (or a consonant) but most modern languages have now neutralised all final vowels to a central [ə]. Pre-Nganyaywana had a few words ending in *a*, *u* or *i* but most showed a final consonant; the modern language has added *-a* to all the latter so that almost all words end in this segment (but there are a few final *-u* and *-i*, and these are clearly distinguished).

Shift of stress was probably a preliminary to most instances of initial dropping. For some reason, not as yet understood, stress must have moved from first to second syllable in all types of words. It would then have been quite natural for the stressed vowel, V_2, to exhibit maximal contrast and differentiation – as in the conditioned changes */a/ > /ɛ/, */a/ > /ɔ/ in Mbabaram, and in the introduction of /w/ or /y/ onset by 'metathesis' – and for C_1 and V_1 to reduce or drop. For modern languages in initial-dropping areas stress usually goes onto the first vowel that follows a consonant – /wɛ́/, /abɛ́rr/, and so on; that is, stress goes onto V_2 from an original form $C_1V_1C_2V_2$ . . .

There are many aspects of the associated changes which are referred to as 'initial dropping' that are far from being fully understood. We mentioned that Uraði has dropped C_1 from some words, in others C_1 has lenited to a semi-vowel, but in the remainder original C_1 is preserved; no conditioning factor can be perceived. Similar comments apply to Yaygir, from north-east New South Wales. Luise Hercus has investigated initial dropping in Arabana–Wangganguru, just to the south of the Arandic languages. Here just *ŋ*- has been lost, and that only from pronouns, kin terms, interjections (and adverbs that can be used in single word utterances). She suggests an answer to the question of why just these classes of words should be the first to show initial dropping – 'the feature that is shared by these three categories of words is that in Arabana–Wangganguru they are precisely the words found most frequently at the beginning of an utterance. Their initial consonant was therefore in the initial position par excellence and most liable to loss.'

7.2 Endings of words

Typical Australian languages, as described in chapter 6, show clusters of two – or occasionally three – consonants between vowels; only a single consonant can be encountered at the beginning or end of a word. There are a number of changes that have led to the appearance of initial or final clusters, in a number of languages. In initial-dropping languages the initial CV- can be lost, and what was formerly an intervocalic cluster is now found word-initially; the actual initial clusters found in these languages roughly correspond to those occurring between vowels in the canonical Australian pattern (described in 6.6.2–3).

There are a few languages, in the south-east, that have initial clusters of a different type. Yaralde (language A on map 7 in chapter 8) has initial clusters commencing with any non-retroflex stop or nasal or either semi-vowel, followed by a rhotic or an apical nasal or lateral; it seems likely that these are the result of an unstressed vowel in the initial syllable being elided i.e. $*C_1V_1C_2V_2 \ldots > C_1C_2V_2 \ldots$ A similar pattern of initial consonants is found in Muk-Thang (language M on map 7); Yaralde and Muk-Thang are 500 miles apart, with few cognates, suggesting that similar changes may have operated independently in the two languages.

Some languages have systematically lost the final vowel of each word which ended in an open syllable; this can bring every type of consonant, and also consonant clusters, into final position. A change of this type has affected languages along the western side of the Cape York Peninsula. Some are initial-dropping tongues, and have then lost the beginnings and ends of words – e.g. */guna/ 'faeces'>Oykangand /a^{d}n/ – while others have not undergone initial dropping – e.g. Kukatj /gun/ 'faeces'. This can even lead to a final cluster of two nasals – compare /ŋinm/ 'is going' with /ŋinəm/ 'is sitting' in Gog-Nar. It is likely, however, that some final clusters of this type resulted from an unstressed vowel having been lost BETWEEN the two consonants – the allomorph *-nm* of the customary verb inflection in Oykangand may come from an original *-*nim*.

The study of the phonological possibilities at the ends of words is an important topic in reconstructing the grammatical development of Australian languages. Unlike initial droppings – which are probably all quite recent changes – there appear to have been a number of shifts in word endings, at various times during the period since proto-Australian.

It is probable that pA was like most modern languages in permitting words to end either in a consonant or in a vowel. But in changes since then some languages and groups of languages have, for a certain historical period, demanded that all words end in a vowel, and others that all words end in a consonant. After a time (quite possibly, of the order of a thousand years or so) such a requirement may be relaxed, and all types of endings again allowed. Phonotactic changes of this type can lead to grammatical reanalysis; we shall show in chapter 10 that the development of phonologically divergent allomorphs for ergative and locative cases can be explained in these terms.

7.2.1 *Vowel-final languages*

We have already mentioned Nganyaywana, where every root ends in a vowel. Here /a/ has simply been added after a final consonant.

From */ganay/ 'yamstick' we get the modern root /naya/; this functions as the absolutive form, and all oblique cases involve a vowel-final inflection to this vowel-final root e.g. instrumental -/nda/, giving /naya+nda/ 'with a yamstick'. Languages in the Arandic group from Central Australia and some of the Wik languages from central Cape York Peninsula added [ə] to produce vowel-final words.

Over a fair portion of Western Australia languages can have ROOTS ending in a consonant, but all WORDS must end in a vowel. Some roots end in vowels and most suffixes are vowel-final; but if, after all morphological processes have applied, the word does end in a consonant then the syllable *-pa* is appended, almost as a sort of clitic, to produce a vowel-final word. Hale has quoted examples from two dialects of the Western Desert language: Luritja, which permits consonant-final words and does not use the augmenting *-pa*, and Pitjantjatjara, which disallows final consonants and employs *-pa* in these circumstances. Thus the paradigm for 'tongue' is:

	LURITJA	PITJANTJATJARA
root	*tjarliny*	*tjarliny*
absolutive form (zero inflection)	*tjarliny*	*tjarlinypa*
ergative form	*tjarliny+tju*	*tjarliny+tju*
dative form	*tjarliny+ku*	*tjarliny+ku*

Dative is *-ku* after all types of stem. Ergative has a number of allomorphs, depending on the stem-final segment; after a nasal it is a homorganic stop plus *u* i.e. *-tju* after *ny*.

There is in Pitjantjatjara a difference between the forms of roots and the form of words – the former permit final consonants whereas the latter do not. Speakers would never pronounce a consonant-final form but the underlying roots, that are the basis for word formation, can end in a consonant. Now Hale has argued that there is a preference for underlying forms to show only patterns that are allowed in surface forms, and that in the acquisition of language there is a tendency for words to be reanalysed in such a way that underlying roots will conform to surface patterns. That is, at some later stage in the development of Pitjantjatjara we would expect roots, as well as words, to end in a vowel.

This is in fact what appears to have happened in Warlpiri, Pitjantjatjara's northerly neighbour and close genetic relative. *-pa* must originally have been added just to a fully inflected word if that ended in a consonant, as in Pitjantjatjara. But then the root was interpreted as involving *-pa* and inflections added AFTER this syllable. Whereas in Pitjantjatjara inflections can be added to a consonant-final root, in Warlpiri all ROOTS end in a vowel, *-pa* having been incorporated into the form of a root that showed a final consonant in an earlier stage of the language. Thus the cognate form for 'tongue' has the paradigm in present-day Warlpiri:

	WARLPIRI
root	*jalanypa*
absolutive form (zero inflection)	*jalanypa*
ergative form	*jalanypa+rlu*
dative form	*jalanypa+ku*

Ergative has allomorph *-rlu* after a stem of three or more syllables. (In 7.3 we mention how this change has led to vowel length becoming phonologically contrastive in Warlpiri.)

There are a number of other examples of modern languages that add *-pa* to consonant-final stems or roots – sometimes optionally, sometimes obligatorily. In chapter 11 we shall suggest that in certain areas the syllable *-pa* was added to monosyllabic pronouns to give disyllabic forms.

Why it should be *-pa* that is used to form vowel-final stems (and to make disyllabic forms from original monosyllables) is an intriguing question. In terms of our phonological description, in 6.8, this is in fact fairly predictable. We demonstrated a preference for syllables to begin with a peripheral consonant; and stops are usually restricted to syllable-initial position. What more natural than that the 'dummy syllable' should begin with one of the peripheral stops, followed by the unmarked vowel?

Languages which permit a variety of different segments to end words tend to have a number of quite different forms of the most common inflections – depending on whether the stem ends in a nasal, or a lateral or rhotic, or a vowel, and so on. Vowel-final languages usually have less morphological alternation. An extreme case is Pitta-Pitta where every root and every word ends in a vowel and each suffix has a single phonological shape.

7.2.2 *Consonant-final languages*

Paralleling the general addition of *-a* or else *-pa* to produce vowel-final forms, there is also a recurrent device for producing consonant-final forms for languages that demand these.

Languages from a number of different areas had added /ŋ/ onto a final vowel, to produce a word that ends in a consonant. This has happened in some dialects of Anmatjera, from Central Australia, and in the middle Paman language Wik-Meʔnh. Hale reports that in Anmatjera it has applied only to disyllabic forms and quotes the development **karli>ayla>alʸaŋ* 'boomerang'; words that do not consist of two syllables are still permitted to end in a vowel.

In the Northern Paman tongue Uraði roots and affixes can end in a vowel, but a final dorsal consonant is always articulated after a word-final vowel or glide; this is an unreleased dorsal stop if the preceding consonant was a stop, and a nasal if the consonant to the left was a nasal e.g. /yuku/, [yúkuk˺] 'tree', /ama/, [amáŋ] 'person'. The final dorsal in Uraði carries no meaning contrast and so is not a phonological element – it is an automatic phonetic addition.

We would, from the analogy of /pa/, expect to find some languages in which this /ŋ/ had been incorporated into the forms of roots, so that not only words but also roots ended in a consonant. There is evidence that this did happen over a wide area in the south-east. In Muk-Thang, from Gippsland, for instance, almost all disyllabic roots end in a consonant, with the most common final segment being /ŋ/; amongst monosyllabics and trisyllabics there are more final vowels. Most south-eastern languages do now permit vowel-final roots and words, but a past stage in which final consonants were obligatory is suggested by the high proportion of roots that end in /ŋ/ e.g. /jinaŋ/ 'foot', /gunaŋ/ 'faeces', corresponding to forms /jina/ and /guna/ in all other parts of the continent. This contrasts with the normal phonotactic pattern, described in the last chapter, whereby most languages do not allow any peripheral nasals in final position.

The use of /ŋ/ to close a final open syllable may be related to the employment of initial /ŋ/ in the formation of loans from English that begin with a vowel (or *h*-) – see 6.8.2. We mentioned Trubetzkoy's suggestion that *-ŋ* is the consonant nearest to a vowel in terms of sonority, and so on. But *ŋ*- could be justified word-initially in terms of the preference for peripherals in that position. The same arguments do not apply syllable-finally, and our phonological description provides NO explanation of why *ŋ* (and not *n* or *l*, say) is used to derive consonant-final forms.

As already mentioned, languages in a small area in western Cape York

Peninsula have achieved a consonant-final form by simply dropping a final vowel; this is more recent, and geographically more limited, than the addition of final *-ŋ*. A variant on this type of change is reported for languages of the extreme south-west; here a final vowel has metathesised with the preceding consonant, putting the consonant into final position.

7.3 Evolution of vowel length

We have said that there are sufficient cognates for us to be quite certain that pA had a contrast between long and short vowels in initial syllables; there is no evidence that it showed long vowels in later syllables of a word.

Some languages have undergone recent changes that have led to increase in the occurrences of long vowels; a change of this type in Yuwaalarraay, from New South Wales, was mentioned in 5.1. In Burduna, from the central west of Western Australia, a plain peripheral stop has been simply deleted between two identical vowels (so long as the first vowel was not preceded by *w*) e.g. **yagan*>*yaan* 'spouse', **mugul*>*muul* 'father's sister' (but **wagadarri-*>*wagadarri-* 'to come, arrive'). In Jabugay, from north-east Queensland, all monosyllabic words must include a long vowel. The three main interrogative forms have each lost their initial syllable, and the remaining vowel has been lengthened – **wanyju*>*juu* 'who', **wanyi*>*nyii* 'what', **wanyja*>*jaa* 'where' (the disyllabic proto-forms are preserved intact in Yidiny, Jabugay's close genetic relative). Some lexical items in Jabugay have lost their final syllable, with lengthening of the new final vowel e.g. **mayi*>*maa* 'non-flesh food', **guwu*>*guu* 'nose', **gudaga*>*gurraa* 'dog' (there are a number of other examples of the change /d/>/rr/). Both Burduna and Jabugay show other instances of long vowels that predate these changes. They may be the result of earlier changes – which we have not yet been able to reconstruct; but at least some of them probably go back to pA.

Some languages do retain the pA length opposition in initial syllables; Warrgamay is an example of this type. Many others have simply neutralised the length contrast, both /aa/ and /a/ falling together as /a/, and so on – Pitta-Pitta and Pintupi fall into this class. There are also languages in which the pA length opposition was lost, but where a new length opposition – quite unrelated to that in pA – has developed rather recently. We can exemplify three of the different ways in which a new length contrast has evolved.

In an earlier stage of Warlpiri there were long and short vowels at the phonetic level but their occurrence was entirely predictable. In disyllabic and longer words all vowels were short whereas the handful of monosyllables showed only long vowels – /u/ was realised as [uu] in a monosyllable and [u] elsewhere, and so on. All monosyllables had a syllable-closing consonant and – as explained in 7.2.1 – they have now been assigned new roots with a final syllable /pa/. Thus */ŋuurr/ 'larynx, throat' is now /ŋuurrpa/; it is distinguished from the unchanged root /ŋurrpa/ 'unknowing, not to know' only by length. The addition of /pa/ to consonant-final roots has thus had the far-reaching consequence of making vowel length become phonologically contrastive in Warlpiri.

Length has developed by a totally different path in the Ngajan dialect of Dyirbal. Here a vowel plus syllable-final *l*, *r* or *y* (but not *rr*) has been replaced by a long vowel. Thus:

*V*l*>VV e.g. **gabul>gabuu* 'carpet snake'; **ŋubirrbil>ŋubirrbii* 'long leech'
*V*r*>VV e.g. **gubar>gubaa* 'scrub wallaby'; **jalgur>jaaguu* 'meat'

With *V*y* we find that **ay>aa*, e.g.
murray>murraa 'hair'; *yalgay>yaagaa* 'road'

but that **uy>ii*, e.g.
nyurruy>nyurrii 'nostril'; *muyŋga>miiŋga* 'cicatrice'

There are no sequences of *-iy* at the end of a syllable. Note that a syllable-initial *l*, *r* or *y* is not affected by this change (e.g. *mala* 'hand', *nyara* 'flame', *guya* 'fish').

Ngajan can thus have long vowels in each syllable of a word (as *yaagaa*); it appears that stress normally goes onto the first syllable. The evolution of long vowels from short-vowel-plus-liquid/glide must have occurred at a specific stage in the language's history; words borrowed into Ngajan since that time can show a vowel-plus-liquid/glide sequence at the end of a syllable e.g. *muyur* 'sore', *junguy* 'vein'.

The operation of the long vowel rule in Ngajan can yield important etymological evidence. Consider the word for 'tongue' – this is *jalŋgulay* in the other dialects of Dyirbal (which have not acquired a length distinction) but *jalŋgulaa* in Ngajan. The vowel length rule has operated on the final *-ay* but not on *-al-*; surely it should have applied to both sequences – as in **yalgay>yaagaa* – or to neither? But *jalŋgulay* is odd in that, although a very common word, it is trisyllabic – the commonest words in Dyirbal are almost exclusively disyllabic. Neighbouring languages have the disyllabic form *jalany* 'tongue'. Suppose that the modern form developed from a compound of *jalany* and an unexplained second element *gulay*. The reduction from *jalany+gulay* to *jalŋgulay* would be a quite natural one – the unstressed second vowel is dropped and the sequence *-l+ny+g-* undergoes assimilation to give the permissable intramorphemic cluster *-lŋg-*. The Ngajan form provides support for this etymology – if 'tongue' had been **jalany+gulay* at the time of operation of the long vowel rule, *jalany+gulaa* would result, this being later reduced to *jalŋgulaa*. The first *l* would not have been in a syllable-final position at the time of operation of the long vowel rule, but would have been put into that position by the contraction of *jalanygulaa* to *jalŋgulaa*, which must have taken place at a later date. This provides an example of one of the ways in which triconsonantal clusters could have evolved, through elision of an unstressed medial vowel (with assimilation then producing a cluster that accorded with the phonotactic possibilities of the language).

Yidiny is Ngajan's northerly neighbour but is grammatically and lexically quite different from it. It has also developed significant length rather recently, but in a totally different way from Ngajan and from Warlpiri. Briefly, Yidiny originally stressed trisyllabic words on the middle syllable e.g. *malánu* 'right hand', *badí+nyu* 'cry+PAST' cf. *málan* 'river', *bádi+n* 'cry+IMPERATIVE'. A non-initial stressed syllable tended to have a phonetically lengthened vowel, [malá·nu], [badí·nyu]. Then the final syllable dropped from trisyllabic forms so that stress was now contrastive e.g. *malá·n* 'right hand' versus *málan* 'river'. At a later stage contrastive stress was replaced by contrastive length – *malaan* versus *malan*; in the modern language stress can be predicted from the occurrence of long vowels, but not vice versa.

Long vowels have also evolved from other sources in Yidiny. For instance, verbs can take an affix indicating whether the activity was done whilst 'going' or 'coming'. These affixes have the form *-ŋali-* and *-ŋada-* for one verbal conjugation but have reduced to *-Vli-* and *-Vda-* on another conjugation – the final vowel of the verb stem to which the affixes are added is lengthened e.g. *wawa+ali-* 'look whilst going'; *magi+ili-* 'go climbing'. The net result of these and other changes is that modern Yidiny has long vowels which can occur only in non-initial syllables (note that there are no monosyllabic verb roots). This contrasts with Warlpiri where long vowels occur only in initial syllables, and

Ngajan where they are attested in any and every type of syllable.

Thus a length contrast has been lost, and has then re-evolved from a quite different direction. An original **waaŋal* 'boomerang' reduced to *waŋal* in pre-Ngajan and pre-Yidiny; it is *waŋaa* in Ngajan and *waŋal* in Yidiny. Similarly, the original root *baadi-* 'to cry' plus past tense **-nyu* became **badi+nyu* in pre-Yidiny and has now developed into *badiiny*.

7.4 Voicing distinction

Just a handful of Australian languages appear to show a distinction between voiced and voiceless stops. In every case that has been fully investigated it can be shown that this is a recent development, by regular phonological change. In the few cases where there are fricatives these do not show a voice contrast.

Wik-Muminh is a middle Paman language, situated between the initial-dropping groups of Northern Paman and southern Paman. Wik-Muminh has not lost C_1 or V_1; but it has dropped the length distinction at V_1 before stops with the result that voicing has become phonologically significant for stops at C_2. Originally a stop was voiced after a long vowel and voiceless elsewhere. This distinction remained after length was lost, and whereas before voicing had been predictable from vowel quality it is now phonemic:

*/papi/ > /papi/ 'father's mother'; */paapa/ > /paba/ 'breast';
*/piipa/ > /piba/ 'father'.

In Warluwarra, from central western Queensland, there is a distinction between [pantu] 'waist' and [paandu] 'butt of tree', and between [wampa] 'dry' and [waamba] 'young woman'. There are two ways of dealing with these. We could take vowel length as contrastive and then predict that a stop will be voiced after a homorganic nasal preceded by a long vowel. Or we could recognise a distinction between voiced and voiceless stops after homorganic nasals and then predict that a vowel occurring before a nasal followed by a homorganic voiced stop will be long. Whichever of voice or length is taken as significant would have a very restricted distribution – a voice contrast between stops would operate ONLY AFTER A HOMORGANIC NASAL; a length contrast would be operative only BEFORE A HOMORGANIC NASAL-PLUS-STOP CLUSTER. There appears to be no compelling reason for preferring one solution over the other. The important point to note is the phonetic similarity to Wik-Muminh, 500 miles to the north-east.

An opposition between voiced and voiceless stops for at least some places of articulation is an areal feature of languages in north-east South Australia and south-west Queensland (see 8.4). In Diyari, for instance, there is a voicing distinction just for apical stops and then only in medial position (the contrast is neutralised word-initially, with the voiced apico-postalveolar stop occurring there; the apico-alveolar stop does not occur initially, and no consonant can occur finally in Diyari). Peter Austin has studied the evolution of a voicing contrast in languages from this area; he suggests that it emerges first in clusters, and for stops with apical articulation, then spreading to other places of articulation and other structural positions.

Austin has also investigated the development of the voicing contrast for stops at all six places of articulation in Burduna, from Western Australia. Here, a homorganic nasal-plus-stop cluster has given rise to a voiceless stop, while an original intervocalic stop has become a voiced stop. (There is no doubt about this pattern of genesis, surprising as it is.) Thus we find **wardandu>wardatu* 'east', **maŋgurdu>makurdu* 'blood', **wagurra>wagurra* 'crow' among many other examples.

Finally, we can mention a contrast between two varieties of stop in some of the languages of Arnhem Land. Beulah Lowe, a pioneer missionary linguist who began work on the Yolŋu dialect Gupapuyŋu in the 1950s, originally recognised just one variety of stop. But when she taught speakers of the language to read and write in it they insisted that, for instance, the 'g' in *djugu* 'louse' was different from the 'g' in *djugu* 'concert'. After this 'k' was written in 'louse' and 'g' in 'concert' (and similarly for other words showing this contrast, and for parallel contrasts at other places of articulation); but for some time the exact phonetic difference between the two kinds of stop remained puzzling. It was eventually decided that it was primarily a difference in quantity – there is a delayed release in the long consonant 'k' (better written /kk/) as opposed to 'g' (better written /k/). Support for this analysis comes from the fact that a root ending in what had been written *g* followed by an affix beginning with *g* gives just *k* at the boundary; this becomes transparent when we now say that -*k* plus *k*- becomes -*kk*- e.g. *manymak* 'good' plus the transitiviser -*kuma* yields *manymakkuma*. A very similar phenomenon has been found in Rembarrnga and Burarra which, although spoken near the Yolŋu area, are not closely related.

7.5 Nasal dissimilation

There is another type of change which recurs in many

Australian languages; we shall have occasion to refer to it in the grammatical discussions of chapters 10 and 12. Roughly, a nasal may be lost from a consonant cluster following a vowel if there was a nasal in a specified position preceding that vowel.

When describing initial dropping in Linŋit̪iɣ, in 7.1.1, we mentioned that a nasal was lost from a nasal-plus-stop cluster at C_2 only if C_1 was a nasal. It is probably best to regard this as two distinct changes – nasal loss, and then initial dropping:

original form	**ŋuŋgu*	'there'	**buŋgu*	'knee'
nasal loss	*ŋugu*		—	
vowel shift	*ŋugo*		*buŋgo*	
initial dropping	*go*		*ŋgo*	

In many languages there are two allomorphs of some of the most common inflections – one with, and one without, a nasal – due to a change of this type. In one dialect of Diyari, for instance, the participial inflection has canonical form *-rnrda*, but is just *-rda* after a stem showing nasal-plus-stop cluster before the final vowel. Similar alternations are found in other languages from all parts of the continent. Within a synchronic grammar of Kalkatungu, from West Queensland, there is needed a rule which deletes the nasal from a nasal-plus-stop sequence at the beginning of a suffix when that suffix is added to a stem which includes a nasal-plus-stop cluster – thus, the 'continued' verbal suffix *-nyjaani*~*-jaani* loses its nasal in *iŋga+jaani* 'go+CONTINUED' but retains it in *dhuna+nyjaani* 'run+CONTINUED'. This rule operates on five of the seven suffixes that begin with nasal plus stop; the ergative case inflection is discussed in 10.2. (An identical alternation of ergative allomorphs, conditioned in the same way, is found in Djaru, 1,000 miles to the west of Kalkatungu.)

The commonly occurring monosyllabic verb root *NHaa-* appears to belong to the *-ŋ-* conjugation. Yet in some languages the conjugation marker *-ŋ-* fails to appear before inflections beginning with *-g-*; *-ŋ-* cannot be dropped for any other verb from this conjugation (one language in which this happens, Walmatjari, is discussed in 12.2.1). *NHaa-* is generally the only verb in this conjugation – which often has just monosyllabic members – beginning with a nasal, and it is probably the initial *NH* which conditions loss of conjugation marker *-ŋ-*. Ngiyambaa, from New South Wales, has sixteen members in a conjugational subclass which clearly relates to the pA *-ŋ-* class; three of them are monosyllabic and of these two begin with a nasal, *ŋu-* 'give' and *ŋaa-* 'see, look' – just these two verbs lack the nasal consonant that comes between stem and inflection for the other fourteen verbs. (Note that in examples of the preceding paragraph nasal deletion was conditioned by a nasal-plus-stop cluster; here it depends just on a preceding nasal.)

Nasal dissimilation appears to be a pervasive tendency in Australian languages. It can provide explanation for a number of types of morphological alternation – in 12.2.1, for example, we are able to explain the development of imperative allomorphs *-naa* ~ *-rraa* for the *-n-* conjugation in Guugu Yimidhirr, from an original **-ga(a)*, partly in terms of nasal dissimilation (there are other languages with a parallel alternation, for which a similar explanation can be given).

7.6 Summary

The changes discussed in this chapter can be extensive and in some cases result in radical enlargement of consonant and vowel inventories, and the production of unusual word structures – monosyllables, words beginning in a vowel or a consonant cluster, words ending in a stop or sometimes in a cluster, and so on. But it is important to stress that these changes have affected only a small number of the languages of the continent (see map 6). Of the 200 or so Australian languages the majority conform exactly to the general phonological pattern described in chapter 6. Some have undergone minor changes – such as allowing words to begin with a vowel, or showing a voicing contrast for some places of articulation. Those few languages whose phonologies are most radically different from the canonical pattern (in the initial-dropping areas) have undoubtedly developed, by quite regular changes, from recent ancestors that did have normal Australian phonologies.

The only really startling phonological system is that of Damin, the Lardil secret language, briefly described in 3.4. As we have already remarked, this system is unusual – not only in comparison with other Australian phonologies but also against the phonology of any known language, from anywhere in the world – making it seem likely that it was deliberately invented.

We still have much to learn about Australian languages; our present suggestions concerning pA are, at best, a first approximation. It is conceivable that further research will reveal pA to have had phonological contrasts that are at present quite unsuspected. It may be that some oppositions which occur in just a few modern languages are isolated survivals of a pA feature. Although it seems to me – on the basis of the presently available evidence – unlikely, it is not impossible that pA could have had medial clusters of three consonants, or a contrast between geminate and non-geminate stops, or a glottal stop phoneme. We have mentioned that pA could have had five vowels – although three seems a little more likely; there could well have been pervasive vowel harmony, of some sort or another.

The conclusions we have arrived at seem justified by the data available. As more descriptions of modern languages are made available, and more detailed comparative work is undertaken, they will surely stand in need of expansion and revision.

8

Classification of Australian languages

8.1 Genetic unity of Australian languages

About three-quarters of the languages of Australia are typologically very similar. They have similar phonemic inventories (6.3, 6.4), arranged in the same basic phonotactic patterns (6.6). Morphologically they work entirely in terms of suffixes; the function of a noun phrase in a sentence – subject, object, instrumental etc. – is shown by case inflections on the words of the noun phrase. Pronouns typically show a singular/dual/plural distinction, and similar pronominal forms recur throughout these languages. A number of the most frequent lexemes also recur in the same or very similar forms (5.1).

The remaining languages fall into two quite distinct groups: (i) those that are phonologically aberrant, often having more consonant and vowel phonemes than the norm and unusual word structures – monosyllables, beginning with consonant clusters, perhaps ending in stops, and so on; (ii) those that are grammatically different – making use of prefixes in addition to suffixes, and showing information about which noun phrase is subject and which object etc. by information coded into the verb. The familiar lexemes which recur in the majority of languages cannot easily be recognised in either of these aberrant groups.

When in 1841 George Grey suggested that all Australian languages 'have a common root' (see 1.3) the material available to him was almost exclusively from the typologically homogeneous languages. He did, however, note that in the language of King George Sound, in the extreme south-west 'the terminating syllable of all names is dropped', thus *kat-ta* 'head' and *meer-ra* 'throwing stick' at Swan River correspond to *kat* and *meer* at King George Sound. Wilhelm Schmidt consulted all available sources in compiling his *Die Gliederung der Australischen Sprachen* (1919); he noted that 'although most of Australia contains languages which despite many differences are nevertheless related through a number of common features, nevertheless the whole of the north of Australia contains languages which do not show any lexical relationship and only very few grammatical relationships with the larger group and even with each other. Here in the north we find a wealth of languages comparable with the diversity found in New Guinea.'

We showed in the previous chapter how – due mainly to the work of Hale – the phonologically aberrant group are now known to have evolved from languages of the normal Australian type through recent, quite sweeping, phonological changes. The common Australian form *guna* 'faeces' became *nwa* in Yinwum from far North Queensland, and *a*^{d}*na* in Arandic, from the centre; *jalany* 'tongue' occurs as *alinya* in Arandic, as *danda* in Nganyaywana from New England, as *lin* 'mouth' in Yinwum. Group (i), comprising languages from the centre and the north-east, together with Nganyaywana from New England, has now been linked with Schmidt's southern group. This large group of typologically similar languages has, as we noted in 1.4, been named Pama-Nyungan (PN), after the words for 'man' at its north-eastern and south-western extremes.

The non-Pama-Nyungan (nonPN) languages in group (ii), being grammatically quite different from the majority of Australian tongues, pose considerable problems. They are in fact quite normal at the phonological level. The generalisations about phonemic systems, in chapter 6, apply equally well to both PN and nonPN languages. There are generally two rhotics, a nasal corresponding to every stop, a lateral in each non-peripheral series, and so on. The isoglosses distinguishing single-laminal from double-laminal and single-apical from double-apical languages are independent of the PN/nonPN division. Most nonPN languages also have similar phonotactics to PN languages – in terms of syllable structure, composition of consonant clusters, and the like. It is the grammatical structures of nonPN languages that require explanation.

In order to prove that a group of languages is genetically related, it is necessary to undertake systematic comparison of their phonological, grammatical and lexical systems; to put forward – on the basis of this comparison – a hypothesis about some of the forms and structures that can be assigned to their putative common ancestor; and then to detail the regular changes by which each modern language has developed from the proto-system. Simply remarking on recurrent similarities and counting possible cognates may suggest a genetic relationship, but it does not constitute proof.

It has, since the time of Grey, seemed likely that at least all PN languages are related, because of similar pronouns, noun inflections, and some common lexemes. But no attempt has been made to PROVE a genetic connection, by explicit reconstruction (in the same way that proof has been provided for the genetic unity of the Indo-European languages, and similarly for Semitic, Algonquian, Finno-Ugric and other families). Chapters 6, 10, 11 and 12 of this book are the first attempt at an explicit proof; interestingly, the most conclusive evidence comes from verbal conjugations, something that was scarcely mentioned by previous writers (this is simply because descriptive studies of verbal systems in critical modern languages have only been undertaken in the past few years).

As Schmidt noted, it is by no means obvious that nonPN languages, in the central north, are genetically related to the major group of Australian languages. They show many formal differences from one another, although they are almost all of the same major grammatical type. The fact that there is one phonological pattern right across the continent is no help; there are many examples in different parts of the world of languages that belong to quite different genetic families but which are spoken in the same geographical region and have identical or almost identical sound systems. Genetic connection between nonPN and PN languages can only be proved if there are formal correspondences, preferably involving some central grammatical elements.

Close examination shows that there are a fair number of cognates between PN and nonPN languages, but the forms have undergone various changes in some of the nonPN tongues. It seems that, although nonPN languages have typical Australian phonological systems, there have been a number of shifts which involve change in the form of certain words, with movement from one phoneme to another phoneme within the system (that is, without changes that create new phonemic distinctions, as has happened in the initial-dropping languages surveyed in chapter 7).

All Australian languages have a laminal stop, *j*, and all except one (Western Torres Straits) have a laminal nasal, *ny*. Despite this, some nonPN languages have apicals in certain key cognates corresponding to laminals in other languages. Thus (cf. 12.2.7):

Gunwinygu (nonPN)	*ni-* 'to sit'	*na-* 'to see, look at'
Nyawaygi (typical PN)	*nyii-* 'to sit'	*nyaa-* 'to see, look at'

NonPN languages tend to have five, sometimes six, vowels; PN languages show a three-vowel system (most PN languages with larger vowel systems are initial-dropping, and their development from an original three-vowel system can be easily reconstructed – see 7.1.2). In some nonPN groups there have been considerable vowel changes, so that recurrent Australian lexemes take on barely recognisable form. Consider five of the commonest pan-Australian forms (5.1) as they occur in three nonPN languages from the Daly River area:

regular PN forms	*dirra*	*guna*	*jarra*	*buŋgu*	*mayi*
	'tooth'	'faeces'	'thigh'	'knee'	'vegetable food'
Malak-Malak	*did*	*wön*	*jad*	*böŋgöl*	*mi*
Tyeraity	*dir*	*wön*	*jer*	*böŋgöl*	*miyu*
Maranunggu	*dirr*	*wun*	*jarr*	*biŋgar*	*miya*

All of these three languages have a five-vowel system, *i, u, ö, e, a*. It is highly likely that the forms given here are cognate with the regular PN forms, although the vowel changes that have taken place are not at present understood (examples of verbal cognates in Daly River languages are given in 12.2.7).

But the most striking difference between PN and nonPN languages is, as we have already said, in their grammatical types. In many PN languages the verb bears no information at all concerning the subject and object of the sentence; which noun phrase is subject and which object is shown by the addition of case suffixes to the words in a phrase – generally, a transitive subject bears the ergative suffix *-ŋgu* ~ *-lu* ~ *-du*, while an intransitive subject or transitive object is left unmarked (we say that this is absolutive case, with zero realisation). The nature and role of case inflections are discussed in the next chapter. In some PN languages from the south-east, from the north-east, and from the west, reduced forms of subject and object pronouns can be attached to the end of a full word – usually they are attached either to the first word of the sentence, or to the verb; but these are clitics rather than affixes, only loosely connected to the host word, and noun phrases still bear case inflections to mark their function in the sentence. NonPN languages differ in that the verb contains obligatory elements which indicate the person, number and gender class of subject and object or indirect object. These cross-referencing elements are prefixes in most nonPN languages and they are morphologically integrated with other verbal elements. In the first paragraph of chapter 1 we quoted a word from Rembarrnga *yarran+məʔ+kuʔpi+popna+ni+yuwa* 'it [the kangaroo] might smell our sweat "along" (i.e. as we try to sneak up on it)'. The first element, *yarran-*, is a portmanteau morpheme indicating first person augmented indirect object and third person minimal subject (cf. 11.1.6); *-məʔ-* is an aspectual prefix 'might; lest; for fear that'; *-kuʔpi-* is an incorporated nominal 'sweat'; the verb root is *-popna-* 'smell'; it is followed by the infinitive suffix *-ni-* and lastly *-yuwa* which is another portmanteau form, indicating progressive 'along' and present tense (*-yuwa* is etymologically related to the present tense form, *wa*, of the verb 'go/come').

Like most languages – in other parts of the world – which have extensive cross-referencing of core NPs in the verb, most nonPN languages lack case marking on the core (subject and object) NPs. It is thus not surprising that the common ergative suffix *-ŋgu* ~ *-lu* ~ *-du* and accusative *-nya*, which provide an obvious grammatical clue to the unity of PN languages, should be scarcely apparent in the nonPN area. The most important non-core case suffix, dative *-gu*, does, however, occur in many nonPN languages.

Pronouns have very similar forms across the PN region. In nonPN languages the main referential load is carried by pronominal prefixes to the verb, which are probably reduced forms of free pronouns in earlier stages of the languages, but have undergone considerable changes. There are some similarities between PN pronouns and free and bound pronouns in nonPN languages, but these are quite limited. One difficulty is that most nonPN languages have a different semantic system underlying pronouns – a minimal/augmented pattern (explained in 11.1.6) whereas most PN languages show a simple singular/dual/plural contrast.

There are also important differences in the number of verb roots for languages across the continent. Some PN languages, especially in the east, have thousands of unanalysable verb roots, to which tense inflections and the like can be added; others, mainly in the west, have less than a hundred roots which take tense inflections, but there are many compound verbs based on these (see 9.4.3). The majority of nonPN languages have an even smaller number of inflecting verbal roots – the number ranges from half-a-dozen to thirty or forty – again with a multiplicity of compound verbs, each of which has a monomorphemic verb as final element. Most PN languages have a number of verbal conjugations. It is possible, by careful comparison of conjugational patterns, to reconstruct the verbal system of the proto-language: roots, conjugation markers and some inflections. These reconstructed verbal forms – set up on the basis of comparison of PN languages – are found to relate directly to the basic verbal roots of nonPN languages. It is this congruence in verbal forms that provides the crucial, convincing evidence that both PN and nonPN languages are genetically related, and do go back to a single ancestor language, proto-Australian. Because of the importance of verbal reconstruction for genetic proof, and also for an understanding of the nature and development of Australian languages, this topic is dealt with in some depth in chapter 12.

Although we do not have the space in this volume to discuss each nonPN language in turn and give detailed proof of its genetic link with PN and with other nonPN languages, sufficient information is given for the interested reader to undertake this task himself, by comparison of our reconstructions and the details given in the grammars of individual languages. The major proof is, as we have said, verb correspondences. To this can be added some similarities in nominal cases and pronouns between PN and nonPN languages, and some cognate nominal lexemes. The phonological homogeneity of all Australian languages, while it cannot provide proof of genetic relationship, is a welcome support to the evidence we have assembled on other fronts.

There are two nonPN languages, for which a fair amount of grammatical and lexical information is available, that cannot be genetically linked with other Australian languages. Tiwi, on Bathurst and Melville Islands – a group that had very limited contact with mainland tribes – and Djingili, on the Barkly Tableland, have open classes of unanalysable verb roots, rather like the eastern PN tongues. Here there is less similarity of verb systems, and no conclusive evidence that they are related to other nonPN and to PN languages in one genetic family. They do show some similarities to other languages in pronominal forms, in one or two affixes, and in a few lexemes; but this is not sufficient to establish a sure genetic connection. Further comparative work is needed on these two languages; it might eventually prove possible to relate them to the Australian family. It may be, however, that these languages do not strictly belong to the Australian family, but have been influenced by areal contiguity with Australian languages and have borrowed a number of superficial Australian features. When we refer to the Australian language family this is to be taken as excluding Tiwi and Djingili.

The superficial differences between nonPN and PN languages – and between different languages in the nonPN area – are simply due to the fact that nonPN languages have developed in a different direction from PN languages, and have undergone the most radical changes. After surveying the grammatical systems of modern languages, in chapters 10–12, we conclude that pA had a fairly agglutinative structure. It had three or four case inflections, which marked subject and object functions of noun phrases, etc.; there is no evidence that pA had bound-form pronouns, or any sort of prefixes. There has been a tendency for languages in a certain geographical area in northern Australia to develop a more complex verbal morphology, with free-form pronouns, adverbs and the like reducing to become affixes, undergoing a number of phonological contractions, assimilations, and so on. Since information concerning the core constituents of a sentence is encoded in the verb, there is little need for case inflections signalling subject and object, and these inflections have in fact dropped out of use. (In 8.4 we describe the Yolŋu languages in Eastern Arnhem Land, which conform to the PN structural type; they are surrounded by nonPN prefixing tongues. The most north-westerly Yolŋu language, Djinaŋ, has recently developed bound pronominal proclitics, and it has almost lost the ergative case inflection, which marks transitive subject in all other Yolŋu languages. The development which we suggest took place between pA and modern nonPN languages is clearly attested – at a much more recent date – from proto-Yolŋu to Djinaŋ.) The PN languages have retained and enlarged the nominal case system, and have often developed complex means for marking types of coordinate and subordinate constructions.

The names 'Pama-Nyungan' and non-Pama-Nyungan' can be misleading; they could be taken to imply that PN languages have something which nonPN tongues lack. In point of fact, so-called nonPN languages have undergone extensive grammatical changes which have altered their typological profiles; PN languages have not undergone changes on this scale and are certainly typologically closer to pA. 'Most-innovatory' and 'least-innovatory' might be better labels, but 'nonPN' and 'PN' are at present used so widely that we shall retain them. The important point to stress is that the division between PN and nonPN languages is a typological (and areal) one. It should not be inferred that PN is in any sense a genetic unity – that there was a proto-PN, as an early descendant of pA. We return to this question in 8.5 after having talked about the difficulty of separating areal from genetic similarities in Australia, and conclude that there is at present no definite evidence for ascribing any genetic unity to PN, as a subgroup within the Australian family.

The discussion of nouns, pronouns and verbs in chapters 10–12 sets forth the evidence for supposing that the languages of Australia are genetically related; a summary is then provided in chapter 14. There remains one important question to ask. To what time in the past should we assign pA, the postulated ancestor of all modern Australian languages? There is a related question. Was proto-Australian spoken somewhere in Australia, and did the split into 200 modern languages take place entirely within the continent? Or might there have been a sizeable invasion, involving thousands of people speaking a number of closely related languages, all descendants of a 'proto-Australian' that might have been spoken somewhere in Indonesia, say, or New Guinea? Unfortunately, it is not possible to answer these questions; nor is it likely that it ever will be.

Man has been in Australia for at least 40,000 years. It could well be that the first-comers spoke pA, and that as they spread out over the whole continent the diversity of modern languages developed. But there has been more than one influx. The dingo was introduced into Australia quite late; archaeologists believe, in fact, that it may have come as recently as 4,000 years ago, tens of millennia after the first men. It could be that the people who brought the dingo, or some other later invaders, spoke pA, and that descendants of this language then replaced whatever had previously been spoken on the continent. (Recall that Gaulish, a Celtic language, was spoken in France at the time of Christ. It has now been replaced by a descendant of Latin, the language of the occupying Roman army, to such an extent that if there were no written records – in Latin – we should scarcely know of the existence of Gaulish.) An important point to bear in mind is that Australia was joined by a land bridge to New Guinea until about 8,000 or 9,000 years ago, although even when sea-level was at its lowest (about 50,000 years ago, and then again about 20,000 years ago) there was always a stretch of at least 50 miles of ocean separating Greater Australia from South-East Asia. There are many possibilities: pA could have been spoken in northern New Guinea with tribes speaking some early daughter languages moving down into Australia, and perhaps the other languages of the family – which remained in New Guinea – being displaced by languages from another family. Speculation on this topic is fascinating but unrewarding; there is no evidence on which to choose between hypotheses.

Anthropologists have suggested that it need only have taken about 2,200 years for Aboriginal Australians to have covered the whole continent to the population depth encountered by white invaders in 1788. It might not have taken much longer for a new kind of language to replace an earlier stratum (although there is no evidence for an older stratum of language identifiable as such, this is obviously a possibility that cannot be dismissed). Nevertheless, it is likely that proto-Australian was spoken a very long time ago – probably at least 10,000 years ago and quite possibly longer. There has probably always been a slow, gradual geographical shifting of some tribes and languages, but there is evidence that many Australian communities have lived in their present territory for a considerable time. We mentioned in 2.5 the existence of traditional stories which seem to describe actual historical events (such as the retreat of the coastline at the end of the last ice age, the last eruption of a now extinct volcano) that took place 10,000 or more years ago. Many languages appear to have been in contiguity, and to have been borrowing lexemes from each other, for a long period.

It seems clear, then, that nearly all the languages of Australia form one genetic family, going back to a single original language, pA. And it is probable that pA was spoken at a considerable time in the past. The present linguistic situation in Australia has had thousands – perhaps tens of thousands – of years to evolve. It is likely that during this period there has been no significant contact with any other languages. But there has been a great deal of opportunity for each Australian language to borrow words and other features from its various neighbours – and these may have sometimes changed, as tribal shifts occurred – and for areal traits to diffuse over considerable regions of the continent. We return to this topic in 8.4.

8.2 Tasmanian

We have already mentioned (in 4.2) the genocide in Tasmania. A handful of word lists were taken down by early settlers but these are of extremely poor quality; they were compiled by people who for the most part had little respect for the Tasmanians or their languages, and no clear idea of how to represent the sounds they heard. Within the last few decades a new manuscript vocabulary has come to light, compiled by George Augustus Robinson, a self-styled missionary who rounded up the survivors of Tasmanian tribes between 1829 and 1834 and transported them to offshore islands, effectively there to die off. Robinson took down a considerable quantity of vocabulary, some of it from parts of the island that had not been represented in previous lists; but the standard of his transcription was even worse than the rest. The Tasmanian corpus consists almost entirely of word lists. Robinson wrote a short sermon in 'Tasmanian'. Thomas Wilkinson, employed as catechist at Flinders Island for a few months during 1833, attempted to translate a dozen verses of the first chapter of Genesis into the Ben Lomond dialect; his grasp of the language was plainly inadequate and Governor Arthur commented on it 'the perusal of this leads me deeply to regret that a Person who can be so useful shd have, unfortunately, acted so imprudently!' The best of the Tasmanian sources is the material of Dr Joseph Milligan; besides a vocabulary he included almost 100 short sentences, apparently from the Oyster Bay tribe, and also notes on the pronunciation of Tasmanian words.

Because of the scarcity and poor quality of the data, it is hard to know how many different languages there were in Tasmania. We know that there were at least sixteen distinct tribes, each with its own dialect. The only material for comparison is lexical, and that varies in quantity. Thus, Oyster Bay and Big River tribes share 70 out of 82 comparable items, which suggests that they were probably dialects of a single language. The largest number of items available for comparison is the 119 between Oyster Bay and South-eastern tribes; 54 per cent appear to be cognate, a figure that does not allow any sure conclusions to be drawn concerning their affiliation. For comparison between other dialects the figures are pitifully smaller – sometimes only 7 or 8 words can be matched in meaning.

We emphasise in 8.5 that the methods of lexicostatistics are not fully applicable to the Australian situation. Certainly any tentative conclusions from short vocabulary comparisons need to be verified by comparing the full grammatical systems and dictionaries of the languages. The Tasmanian data could point to as few as eight languages or as many as twelve. The honest answer to the question 'how many languages were there in Tasmania?' is 'we don't know'; to say 'somewhere between eight and twelve' is to hazard an only slightly informed guess. What is fairly clear is that there were considerable phonological and lexical similarities – and, where data is available, some grammatical similarities – between the different tribal dialects/languages.

By comparing the variety of orthographic representations provided in different word lists of the same dialect for what seems to be a single lexeme, we can attempt to reconstruct the phonetic, and then the phonological, forms of Tasmanian words. For example:

	'cockatoo'	'emu'
spelling given by Milligan:	*ˈnghara*	*ˈngunannah*
Robinson:	*nar.rar*	*gonanner, gon.nan.ner*
Roberts:	*ngarana*	*nganana*
inferred form:	/ŋarra(na)/	/ŋanana/

Two professional investigators have recorded some Tasmanian. In the 1930s, N. B. Tindale was engaged in ethnological research among part-blood descendants of Tasmanian women and white sealers on Kangaroo Island, off the South Australian coast; he transcribed seven or eight words and one sentence. Tindale also remarked that his material involved an interdental stop consonant, as in many mainland Australian languages. Then in 1972 Terry Crowley interviewed Mrs Heffernan and Mrs Mundy, granddaughters of the half-caste Tasmanian Fanny Cochrane Smith who had recorded some Tasmanian songs and speech on cylinders for the Royal Society of Tasmania about 1900 (these are so indistinct that no phonetic information can be gained from them). Crowley was able to make the first, and possibly the last, audible sound recordings of Tasmanian – he gathered five words, one sentence and a fragment of a lilting corroboree song, the meaning of which is not remembered. Mrs Heffernan had plainly never 'used' the few words she knew and recalls having to beg her mother to tell her what she knew of Tasmanian. However this material is an invaluable check on inferences made from comparing early vocabularies. For instance, Mrs Heffernan gave the word for 'foot' as [laŋənə]; the pronunciation was almost wholly assimilated to that of Australian English, and on repetition she added the English plural suffix *-s*. Compare this with two different spellings found in Robinson, two in Milligan and one in each of two other writers:

Robinson:	*lag.gen.ner*; *leg.ger.ner*
Milligan:	*luggana*; *lugganah*
Jorgenson:	*langana*
G. W. Walker:	*lãngĕhnĕh*

It is likely that the original form was /laŋana/; this could perhaps have been inferred from the published materials, although we would probably not have been able to decide between /laŋgana/, /lagana/ and /laŋana/ without Mrs Heffernan's recording. Taking just one further example, Robinson (alone) gave *larmtener* for 'meat'; from this we might infer an original form [lamtena]. But the word was pronounced by Mrs Mundy as [læmθəni], suggesting a possible phonological shape /lamt̪ani/.

Although we cannot be certain of the phonetic and phonological form of any individual word, we can make a number of fairly sure generalisations about the phonetic and phonological system of Tasmanian languages. Thus, we could not guarantee to reconstruct initial /ŋ/ in every word in which it occurred, but we can be quite certain that there were some words in Tasmanian beginning with this sound. Study of the variant spellings given for common words enables us to attempt a reconstruction of the sounds they contained, and tentatively to group these into phonemes.

It seems certain that voicing was not phonologically contrastive, that [v] was an allophone of /w/ and that the velar fricative [ɣ] – noted by Milligan and transcribed by him as '*gh*' – was an allophone of /g/ occurring mainly before /r/. Compare:

	'swan'		'ear'		'teeth'
Milligan:	*pugherittah*	Rossel:	*vaigui*	Robinson:	*pagee*
Robinson:	*pick.rer.dar*	Roberts:	*wegge*	Roberts:	*bey.ge*
Sterling:	*pĭck.ĕr.rĕr.dăr*	Milligan:	*wayee*	Rossel:	*paigui*
inferred form:	/bigrida/		/waygi/		/baygi/

There is evidence that Tasmanian had four stops with a nasal corresponding to each; these were labial, apico-alveolar, laminal and dorso-velar, exactly on the regular Australian pattern. There is evidence for both lamino-palatal and lamino-dental stops, at the phonetic level. Both of these appear to occur before /i/, suggesting that this may have been a phonological contrast; but the data are too unsure for us to be certain of this. (There is no evidence for a lamino-dental nasal, *nh*, distinct from *ny* and *n*; but this is not a distinction which we could have expected the primitive system of transcription to bring out.) There is no evidence at all for retroflex sounds. There were two semi-vowels, a single lateral and, it seems, two rhotics. At least, in the transcription of some words *r* alternates with *l* while in others *r* is used by some writers and *rd* by others; it is likely that *l*∼*r* represents a rhotic continuant /r/ while *r*∼*dr* was a trill /rr/. Compare:

	'ear'		'call'
Scott:	*roogara*	Robinson:	*droe.ger.ner*; *drone.en.ner*
Arthur:	*lugarana*	Milligan:	*ronnie*
inferred form:	/rugarra(na)/		/rruŋi(na)/

From Milligan's account we can infer at least nine distinct vowel sounds. However, a careful study of orthographic variations suggests that there were probably just three vowel phonemes /a/, /i/ and /u/. There were some longish vowels, but it is impossible to say whether or not vowel length was phonologically contrastive.

It will be seen that the phonological system we have inferred for Tasmanian accords exactly with the Australian type. This does have some quite distinctive characteristics – outside Australian only Dravidian languages are known to have four nasals and also two rhotics. The similarities to mainland Australian languages extend to phonotactics – every word appears to involve at least two syllables (the half-dozen or so monosyllables recorded all have polysyllabic alternants) and must begin with a consonant. Most words end in a vowel, consonant-final words coming almost exclusively from dialects of the west coast; there are no final consonant clusters. There are a few initial clusters – *b*, *d* or *g* followed by *l* or *rr*, similar to the situation in a number of languages from the south-eastern part of the mainland (see 7.2). The most unusual feature of Tasmanian is that a fair number of words begin with the lateral /l/ (15–20 per cent) or with the rhotic /rr/ (about 5 per cent); it is very unusual to find these two sounds at the beginnings of words – especially, at the beginnings of so large a proportion of the vocabulary – in mainland languages.

There is little more we can say about Tasmanian. There appear to have been suffixes – a word would sometimes be quoted with a final syllable like *-na* or *-ga* and sometimes without it, as in the forms for 'cockatoo', 'ear' and 'call' given above. However, a most careful checking of the data and investigation of all sorts of hypotheses fail to throw any light on the function of these 'suffixes'; they appear not to be markers of number, or case, or pronominal possession.

Two sets of pronouns are reasonably well attested; their forms can be reconstructed as:

	east-central and south-eastern	western and north-western
first person singular 'I'	/mi(na)/	/maŋ(a)/
second person singular 'you'	/ni(na)/	/niŋ(a)/

These show no significant similarity with recurrent Australian forms (see chapter 11). (Note, though, that for the Ben Lomond tribe in the north-east Robinson's notebooks give *i.tho* 'I' and *nuc.co* 'you'. Tasmanian words do not begin with a vowel and for the former we could suggest that there was an original *y* or possibly *ŋ*. If *ŋ*, the form would be /ŋidhu/ or /ŋaydhu/, similar to first person pronouns found in mainland languages (11.1). This possible link, which involves a fair amount of guesswork, is the closest we can get to any grammatical connection between Tasmanian and Australian!)

On syntax, we can remark only that an adjective will follow the noun it modifies. The predominant word order in sentence material is Subject-Verb-Object but this may just indicate that English sentences were translated word-by-word.

A century ago it was suggested that the physical type and culture of Tasmanians was non-Australian; following this, it was said that their language was not related to Australian. Recently, anthropologists have revised their opinions and now consider Tasmanians to have been an Australian group, cut off when water flooded the Bass Straits some 12,000 years ago. There is strong evidence that their physical make-up, habits and customs were not very different from the Australian model, allowing for the millennia of separation.

Linguistically we can simply note that the hypothesis that the Tasmanian languages were of the regular Australian type is fully verified, at the phonological level. Singular pronouns are unfamiliar and we know nothing more about the grammar. A handful of possible cognates can be found with mainland languages, no more than a committed researcher could find by comparing the vocabularies of any two languages; nothing concerning genetic connection can be inferred from them. All that we can conclude is this – there is NO evidence that the Tasmanian languages were NOT of the regular Australian type. They have been separated off for so long, and the available materials are so poor, that the likelihood of a genetic connection cannot be confirmed. The genetic affiliation of Tasmanian is, and must remain, unproven.

8.3 Possibility of a link with language families outside Australia

The inhabitants of the Torres Straits islands, between Queensland and New Guinea, are Papuan in physical type and culture. There are two quite distinct languages – one spoken in the western, and one in the eastern, islands. These languages share a number of lexical forms and have significant phonological similarities – they both have a voicing contrast for stops, and both show sibilants *s* and *z*. There are, however, few similarities at the grammatical level. The language of the eastern islands is believed to be related to Bine, Gidra and Gizra, spoken around the mouth of the Fly River, in Papua New Guinea; it is definitely not an Australian language.

The language of the western islands does belong to the Australian family. Although it has some unusual characteristics, there are enough correspondences with mainland languages to leave no doubt concerning the genetic connection. Pronouns, in particular, have typical Australian form; some of the most frequent verbal roots are cognate with forms we set up for pA in chapter 12. Case systems and syntax are of a typically Australian type – although only some inflections have a recognisable form, ergative being *-n*, for instance. The phonology of the Western Torres Straits language conforms to the minimal Australian pattern of four stop series (6.4) although there are only three nasals (*m*, *n*, *ŋ*) and only one rhotic; interestingly, the Eastern language has just three stop series (*p*/*b*, *t*/*d*, *k*/*g*) and only two nasals (*m* and *n*), lacking dorso-velar *ŋ*. The presence of sibilants *s* and *z* in the Western language appears to be due largely to loans from the Eastern language, although some occurrences may have developed from an original **j* e.g. **jiba*>*siib* 'liver', **jana* 'foot'>*san* 'sole, footprint' (*san* actually means 'foot' in the Saibai dialect). It is possible that the first people to settle in the western islands took wives from Australian tribes near Cape York (or from an Australian tribe which previously inhabited the western islands), and that this Australian tongue replaced the original Papuan language, although Papuan elements predominated in all other cultural spheres. Certainly, some of the unusual features of the Western Torres Straits language could be explained by its having evolved from an Australian-based Creole.

Apart from lexical borrowing between the two Torres Straits languages there is no evidence of any linguistic interaction between the languages of Australia and those of New Guinea. The linguistic differences are such as to exclude any chance of genetic connection between Australian languages and the Papuan tongues of the central south coast of New Guinea; the Austronesian languages in the south-east and north coastal regions came into the area only within the last 5,000 years – they are also totally different from Australian.

Languages in the northern part of the Cape York Peninsula have undergone remarkable phonological changes in quite recent times – initial dropping and the like (7.1). There is, however, no suggestion that this could have been influenced in any way by contact with Papuan languages. For one thing, parallel changes took place in other parts of Australia, far removed from New Guinea (7.1). And it is significant that these changes have not occurred in the intervening Western Torres Straits language, which maintains a more normal Australian typological pattern, sometimes dropping a final vowel. Thus the regular first person singular pronominal form *ŋadhu* 'I' is reflected as *ŋath* in the Western Torres Straits language but as *tho-* in Linngithigh from the northern Cape York Peninsula (cf. 7.1).

The Australian language family is, then, geographically self-contained. It comprises all or almost all the languages of Australia and of the western Torres Straits islands, and may well also have included the extinct languages of Tasmania. It is likely that Australian languages have been in the continent for a considerable period. Although there is no evidence available on which to assign a date to proto-Australian, it was quite probably spoken at least 10,000 and conceivably as much as 40,000 years ago. This can be compared with a date of 2500 to 4000 B.C. assigned to proto-Indo-European, and about 1000 B.C. for proto-Bantu.

It is interesting to see which other language families are typologically similar to Australian, and then to consider whether there is any evidence for a wider genetic link. Typologically, there are strong parallels between Australian languages and Eskimo; both have a fairly agglutinative morphology organised on an ergative basis, and their phonological systems also show some similarities – Eskimo has a nasal corresponding to each of the four stops, few fricatives, three vowels with contrastive length, and so on. Mon-Khmer languages (spoken in Kampuchea, Thailand and neighbouring countries) are also phonologically close to the Australian pattern – they typically have four stops in precisely the places of articulation found in Australia, a nasal corresponding to each stop, two semi-vowels, and liquids *r* and *l*; on the debit side, they also show *s*, *h* and the glottal stop *ʔ*, they have contrastive voicing for stops, and their vowel systems can be very complex. There is little grammatical similarity between Australian and Mon-Khmer. Attempts to find cognate lexemes and affixes between Australian and either Eskimo or Mon-Khmer yield very little – a handful of possibilities, but there are no more than can be uncovered by an acquisitive comparison between ANY two languages. There are in fact only a limited number of linguistic types found in the world, and these languages just happen to coincide in a number of features; this is essentially accidental, and provides no evidence for genetic linkage.

Many suggestions have been put forward concerning wider affiliations of Australian languages. In 1844 a connection with Malayo-Polynesian and with Papuan languages was proposed; this was followed in 1847 by a link with the Dravidian languages of South India, and in 1872, 1878 and 1886 by quite different hypotheses concerning links with African languages. In 1890 it was suggested that Australian languages were linked with the languages of Oceania, and that these were all related to the languages of the Andaman Islands; a further work along these lines, in 1906–9, began with the same hypothesis but then extended it to include Munda and Dravidian as well. There have also been suggestions of a connection with Indo-European languages, and even with American Indian tongues. The most recent proposal, put forward by Greenberg in 1971, links Tasmanian (not Australian) with the Andaman languages and with the many diverse languages of Papua-New Guinea.

Only the Dravidian suggestion deserves to be taken at all seriously. The remainder are based on a handful of words, often badly transcribed; the small number of correspondences suggested involve considerable formal and semantic leeway. None comes anywhere near meeting standard criteria for establishing genetic relationship – rigorous, systematic correspondences at all levels, such that a proto-system can be posited together with the regular changes that gave rise to modern languages.

There is considerable typological similarity between languages of the Dravidian and Australian families. Bishop Robert Caldwell remarked in 1856 that they had similar word order, agglutinative morphology, use of postpositions instead of prepositions, types of verbal derivational affixes, and an inclusive/exclusive distinction in non-singular first person pronouns. These are in fact all fairly broad typological classes, each being shown by many languages. The most remarkable similarity is at the phonological level. Many Dravidian languages have, like Australian tongues (6.4), six series of stops and nasals – labial, dorso-velar, apico-alveolar, apico-retroflex, palatal, and APICO-dental (this is the only significant difference – Australian languages generally have a LAMINO-dental series, with the blade of the tongue, not the tip, touching the teeth). There are two or more laterals, two rhotics and scarcely any fricatives; proto-Dravidian, at least, had no voicing contrast between stops. There are even strong phonotactic similarities – apico-alveolars and apico-retroflexes are not generally found word-initially in Dravidian (cf. the Australian situation described in 6.6.2.).

There are now excellent linguistic descriptions available of many Dravidian and Australian languages, and work on reconstruction is well advanced in both families. Unfortunately, a detailed comparison yields scarcely any formal correspondences. There is a dative case inflection which is *-ku* in many Dravidian and *-ku* (= *-gu*) in most Australian languages; but there is little else. Pronouns – which were the only specific cognates suggested by Caldwell – yield little; Dravidian second person singular forms beginning in *ni-* were at one time thought to be close to Australian forms '*nin-*' but these are now seen to have been poor attempts to transcribe *ŋin-* and *nyin-*(<**ŋin* – see 11.1.4). The typological parallels between Australian and Dravidian are striking, but the matter ends there. A thorough search yields no systematic correspondences of form and meaning which could even hint at a genetic connection.

We have mentioned that proto-Australian was probably spoken a considerable time in the past, perhaps some tens of millennia ago. It is this which makes it unlikely that it will ever be possible to demonstrate a genetic connection between Australian and any other language family. Any sister language that pA may have left behind in South-East Asia, say, is likely to have changed out of all recognition over the intervening period, so that there would be insufficient points of similarity remaining for any connection to be recognisable. (Or it could well be that relatives of pA have NO living descendants.) Generally, languages change at such a rate that after more than about three or four thousand years of separation genetic links are no longer recognisable. Australian languages have been relatively isolated from contact with other languages and cultures, and may well have changed at a comparatively slow rate; but any relative that they left behind in regions that were more linguistically cosmopolitan would not have been sheltered in this way.

The most obvious place to look for a genetic link is of course New

Guinea, which was joined by a land bridge to Australia no more than 9,000 years ago. New Guinea contains something like eight or nine hundred languages (perhaps 20 per cent of all the languages in the world) making up several score distinct families. Surely amongst all these languages there should be some group with significant formal similarities to Australian? There is, in fact, no trace of anything at all. True, there are – as would be expected – some Papuan languages that show typological similarities to Australian. To mention just one example, the Ndu and neighbouring languages in the Sepik region have four stop–nasal series, just like the minimal Australian pattern; there are also singular, dual and plural pronouns and – a point of similarity with the languages of Arnhem Land – a system of noun classification with extensive concordal scope. But there are no systematic formal–semantic correspondences, no significant sets of cognates.

It must be noted, though, how little competent linguistic research has so far been done in New Guinea. It is not impossible – although it does not seem very likely – that further research could reveal some New Guinea language that appeared to be genetically related to the Australian family (or that comparative reconstruction could reveal a New Guinean proto-language which could be related to pA).

In summary, there is absolutely no evidence for a genetic connection between Australian languages and anything outside the continent; there is not even any remote 'possibility', that scholars could argue about. It seems that the languages of Australia have been so long in their present location that any evidence of connection with other languages has been, through time, eroded away.

8.4 Areal features and diffusion

During the period that Australian languages have been in the continent there is no evidence that they have had substantial contact with other languages or cultures, save for that already mentioned between the Australian language spoken in the western islands of the Torres Strait and the Papuan language of the eastern islands. There was a little lexical borrowing from Macassan traders who visited the shores of Arnhem Land – *balanda* 'white man' and *rrupiya* 'money', for instance, are believed to be adaptations of Macassan words, originally derived from 'Hollander' and 'rupee' respectively. But Macassan visits are thought to have begun only towards the end of the seventeenth century, a short time before the arrival of Europeans in Australia, and there is evidence only of a handful of loans.

There must undoubtedly have been a gradual but constant shifting of tribal groups within Australia, so that a given language X may have been in contact with Y and Z for a few centuries but then come into contact with different languages, V and W. Tribes would have split when their number increased beyond a certain size; this would have led to the recognition of separate (tribal) languages_1, which would in time be likely to develop into different (linguistic) languages_2 (see 2.3, 2.5). There must also have been many instances of local group merger, and perhaps of tribal merger, when numbers were reduced by famine, drought, disease or some other factor. Under these circumstances a Creole-type language could sometimes have emerged; since it would be surrounded by languages with normal Australian morphologies, a Creole would be likely to take on these features and after a few centuries would be typologically indistinguishable from other Australian languages. (There are only occasional features which engender a mild suspicion that certain languages may have evolved from Creoles. For instance, some of the languages in western Cape York Peninsula make great use of compounding, in cases where most other Australian languages show single lexemes – see 5.2.3. There appears to be no possibility of uncovering further evidence, to confirm or deny these suspicions; it could be that extensive compounding was simply an innovation in languages of this region.)

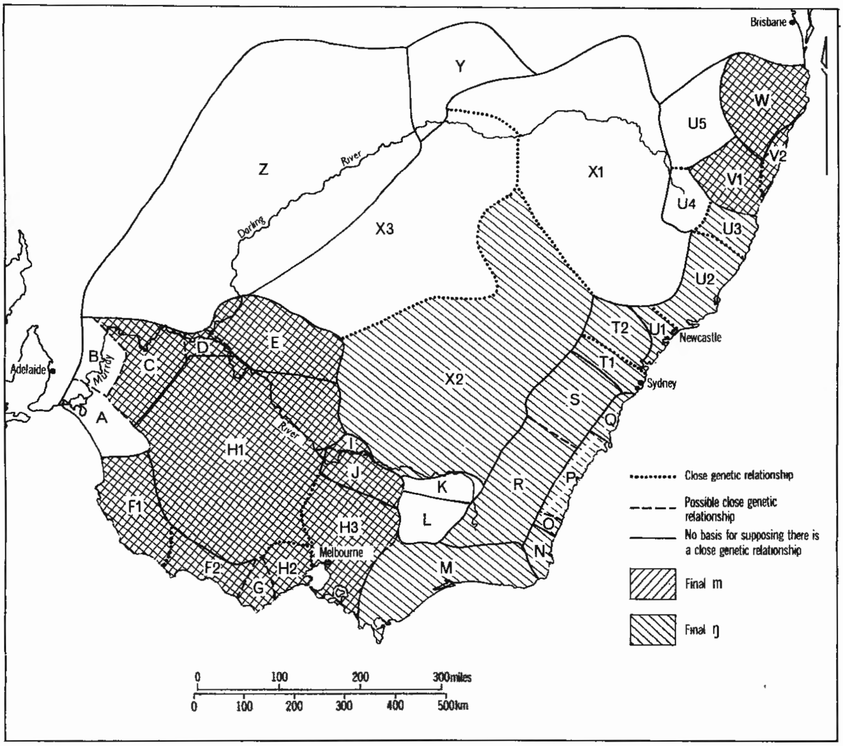
This pattern of events has given rise to the present linguistic situation in Australia, where for each characteristic of a given language can be found a parallel in some other Australian tongue, but the parallels for different features occur in different languages, spread over the whole continent. There is at first sight no obvious major subgrouping (as there is of Indo-European, for instance, into Celtic, Germanic, Slavic, Romance, Indic and the rest).

We can recognise some low-level genetic subgrouping within the Australian family, on the basis of shared innovations during the period of development from pA. We return to these – and the difficulty of finding criteria to support a thorough subgrouping – in the next section. But it is also possible to recognise a number of areal features, at the phonological, morphological and syntactic levels. The noteworthy point is that isoglosses for these features scarcely ever run along genetically relevant boundaries; they appear to be geographically determined, and to be quite independent of genetic subgrouping within the Australian family.

Examples include the isoglosses separating single-laminal from double-laminal, single-apical from double-apical, and single-dorsal from double-dorsal languages, and that distinguishing languages with a single lateral from those with a lateral in each (or most) non-peripheral series – these are shown on map 5. None of those isoglosses appears to run along strong genetic boundaries for more than a fraction of its length.

This lack of correlation between genetic and areal factors can be illustrated for the subgroup of languages in central and southern Queensland that are known as 'Maric' (after the recurrent lexeme *mari* 'man'). Maric languages form a genetic subgroup with similar grammar and vocabulary. There is one major phonological difference: the apical isogloss runs through the middle of the subgroup (see map 5), western languages having two and eastern languages a single apical series. Two other phonological differences each applies on the periphery of the group. Margany–Gunya, at the south-western corner of the Maric region, does have a contrast between voiced and voiceless stops, like its neighbours in the south-western corner of Queensland and in north-east South Australia. This voicing contrast is an areal feature which applies to a group of languages belonging to different genetic groups but all spoken in a continuous geographical region; Margany–Gunya is on the edge of this region. The other phonological exception is up at the north-eastern extremity of Maric territory. Gugu-Badhun has a laminal contrast, like the other Maric languages, but Warungu – another dialect of the same language as Gugu-Badhun – has only a single laminal series. Warungu is like its genetically distant eastern neighbours, Dyirbal and Warrgamay, in lacking a laminal contrast; here we see that the single-/double-laminal isogloss runs between two dialects of a language.

There are quite a number of other phonetic parameters that apply over a certain area, and do not coincide with genetic subgroupings. We have said that pA had a contrast between long and short vowels, at least in the initial syllable of a word. Some languages retain this distinction; others have simply lost it. In a few languages of the latter type, a length contrast has re-emerged, through quite recent phonological change – examples of some of the diverse ways in which this has happened were given in 7.3. Both length loss and length re-emergence can apply to all the languages in a certain region, although they may not be at all



Map 7. Languages of the south-east, showing the occurrence of final peripheral nasals

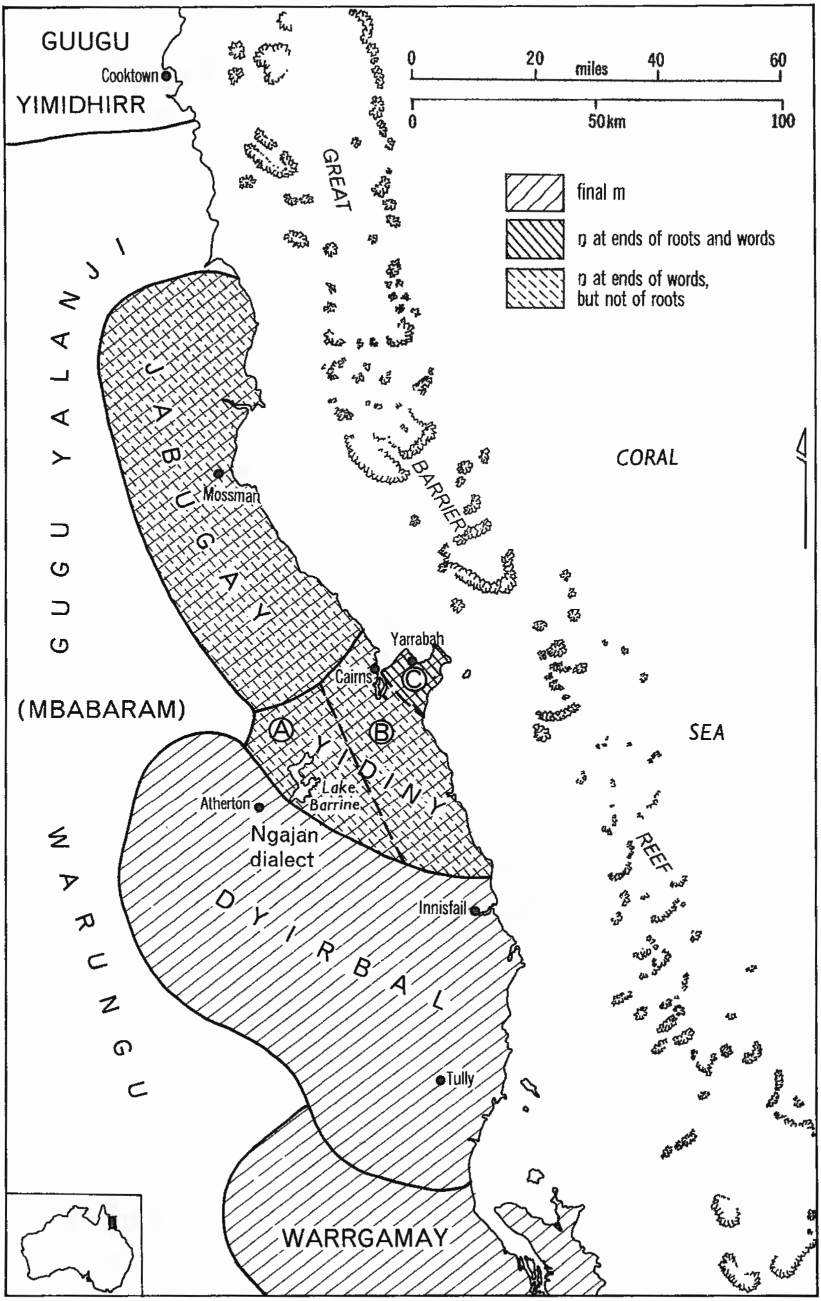
Key. A – Yaralde, B – Ngayawung, C – Yuyu, D – Keramin, E – Yitha-Yitha, F1 – Bungandij, F2 – Kuurn Kopan Noot, G – Kolijon, H1 – Wemba-Wemba, H2 – Wathawurrung, H3 – Wuywurrung, I – Yabula-Yabula, J – Yota-Yota, K – Pallanganmiddang, L – Dhuduroa, M – Muk-Thang, N – Thawa, O – Dyirringany, P – Dhurga, Q – Dharawal, R – Ngarigo, S – Gundungura, T1 – Dharuk, T2 – Darkinyung, U1 – Awabakal, U2 – Gadang, U3 – Dyangadi, U4 – Nganyaywana, U5 – Yugambal, V1 – Gumbaynggir, V2 – Yaygir, W – Banjalang, X1 – Gamilaraay, X2 – Wiradhuri, X3 – Ngiyambaa, Y – Murawari, Z – Baagandji

[Note: most of these languages – recognised on linguistic grounds – cover a number of tribal languages (= dialects). The name of one tribal language has been chosen, fairly arbitrarily, as name for the complete language.]

genetically close. For instance, the pA length contrast in initial syllables is preserved in Guugu Yimidhirr and Warrgamay, the most northerly and southerly languages from map 8, but has been lost in all of the intervening languages – Gugu-Yalanji; Jabugay and Yidiny (which comprise a subgroup); Dyirbal; and Warungu (of the Maric subgroup). A new length contrast has emerged in Jabugay, in Yidiny and in the northerly dialect of Dyirbal, Ngajan, which form a continuous geographical block in the central part of map 8; the length contrast has developed in different ways in each of these three languages (see 7.3).

Most Australian languages permit words to end in any vowel or in one of a number of consonants (always *n*, *l*, *rr*, often *rn*, *rl*, *ny*, *ly* as well – see 6.6.). But there are some languages in which each word must end in a vowel, and others in which there is always a final consonant. This is again an areal phenomenon. Thus in map 7, covering languages of the south-east, languages F2, H2, H3, M and R have all or very nearly all words ending in consonants; but F1, which is closely related to F2, and H1, a close genetic sibling of H2 and H3, allow words freely to end in vowels. (The genetic pattern of this area is explained in the next section; roughly, numeral suffixes indicate languages belonging to a single subgroup, indicated by initial letters.) Those south-eastern languages that have all, or very nearly all, words ending in vowels are A, B, K, L, U4 and Z. Of these A and B may possibly be genetically close, while Z is a multidialectal language covering a wide area, which does not have any obvious close genetic links with other languages. Language U4 (Nganyaywana) has – unlike its kin U1, U2, U3 and U5 – undergone drastic phonological changes rather recently (see chapter 7); one result is that all words must now end in a vowel.

It is not yet known to what extent the considerable phonological changes that are usually called 'initial dropping' correlate with genetic groupings. Certainly the three or four Arandic languages, in Central Australia, are genetically close and have undergone parallel changes; but it could be that initial dropping and associated changes applied a fair time ago to just one language, proto-Arandic, with the development into several modern languages postdating this. These changes have also diffused, in a milder form, into Arabana and other languages which, although spoken immediately to the south of Arandic, are not closely genetically connected. Barry Alpher has examined initial dropping in the Cape York Peninsula area and infers that this took place at a late stage, after the modern languages had separated out; the changes



Map 8. Languages in a part of north-east Queensland, showing the occurrence of final peripheral nasals

undoubtedly began in just one language, and then diffused into all the languages within a certain area. Much more work is needed on the interrelation between genetic development and diachronic changes, in this and other areas.

We mentioned in 6.6 that most Australian languages allow words to end in apical and also laminal non-stop consonants, but not generally in peripherals. There are classes of exceptions, and they are again areally determined. Outside the central north, there are two main areas in which words can end in *ŋ* and *m*. One, the south-east, is shown by appropriate shading on map 7. Note that all of C to U3 and also V1, V2, W and X2 can have final *ŋ* excepting K and L which (like A, B and U4) allow no final consonants. Final *m* is found only in C–J and V–W; it does not occur in M–U, from the centre of the *ŋ*-final region. A further interesting fact is that language P (Dhurga) has scarcely any final *ŋ*'s – many cognates in Q (Dharawal) simply lack the final *ŋ* in P e.g. first person singular pronoun 'I' *ŋayagaŋ* in Q but *ŋayaga* in P, 'fresh water' *ŋajuŋ* in Q but *ŋaju* in P. It may be significant that P, the language with scarcely any final *ŋ*'s, is right in the middle of the block that does not permit final *m*. Historical reconstruction suggests that at some time in the past words could end in *m* or *ŋ* in most or all Australian languages, but that a prohibition on final *ŋ* and *m* then diffused over most of the continent. It may be that this is what is happening in this area. We can speculate that the proscription on final *m* might have begun in or near language P and has now spread to all of M–U, and that the loss of final *ŋ* could have been following the same pattern; we would in time have expected final *m* and *ŋ* to disappear from this region, as they have from almost all other parts of the continent.

It is instructive to compare this with the other area where final peripheral nasals are found – the Cairns Rain Forest region. Map 8 uses the same shading conventions to show languages that have final *m* or *ŋ*. Final *m* is found predominantly in Yidiny, where 4 per cent of roots end in this segment; the feature tapers off from this focal point; Jabugay, to the north, has fewer *m*-final words, and then Gugu-Yalanji has none. Similarly, the number of *m*-final items decreases as we move south from Yidiny, and there are very few or no final *m*'s at all in languages to the west. The pattern with final *ŋ*'s is in some ways the opposite of that found in the south-east; final *ŋ* is more restricted than final *m*, and appears where final *m* is strongest. Roots ending in *ŋ* are found only in the Gunggay dialect of Yidiny (C on map 8); here roots and also suffixes can end in *ŋ* and the final *ŋ* is clearly pronounced. Dialect B of Yidiny has no *ŋ*-final roots, but there are three suffixes ending in *ŋ* (two of them derived from longer forms *-ŋa* and *-ŋgu* by a reduction rule), and this final *ŋ* IS pronounced. Dialect A again has no roots ending in *ŋ*, and although there are the same three affixes that have *ŋ* as closing segment this final velar nasal is not pronounced in A – it is realised as nasalisation of the preceding vowel; thus 'go-PRES' (cf. table 12.1 in 12.2) is *galiŋ* in C and B but *galĩ* in A. (That there is an underlying *ŋ* in dialect A is shown by the fact that it does surface when a clitic is added to the verb e.g. *galiŋ-ala* 'go-PRES-now'.) Jabugay is most like Yidiny-B; it has no *ŋ*-final roots and just two affixes that involve final *ŋ*; this final *ŋ* is pronounced, as in Yidiny-B and Yidiny-C. Thus Yidiny-C is the focal point of the PRESENCE of final *ŋ* and *m*; the phenomenon decreases as one moves away from this dialect, *ŋ* tailing off faster than *m*. This contrasts with the situation in the south-east, where language P appears to be a focal point for the ABSENCE of *ŋ* and *m*, with *m* being eliminated ahead of *ŋ*.

At the level of morphology there are equally striking examples of features that are found each in a particular self-contained area, just like the phonological parameters we have been discussing. In 1.4 we mentioned Capell's classification of Australian languages into those that employ prefixes as well as suffixes, and those that are exclusively suffixing. It can be seen from map 3 (1.4) that, although the prefixing languages are genetically quite diverse, they do form a solid geographical block.

To take another, related, morphological parameter: in some Australian languages all pronouns must be free forms, with the status of separate words. In others, bound pronominal clitics or suffixes have developed and these are added to some major constituent of the sentence (often, the verb), cross-referencing subject and object NPs; there is a fairly full discussion in 11.3. The important point, to be seen from map 9, in that section, is that bound pronouns occur in just three main areas – in all the languages of the centre and west, except for two coastal pockets, in all those of a south-eastern block except for a region along the lower Murray River (languages B, C, D, E and also a northern dialect of language H1, on map 7); and in some languages of the central part of the Cape York Peninsula. There is one isolated example elsewhere – Biri, from eastern Queensland. It is interesting to note that the western group of bound pronominal languages includes the prefixing tongues – the most common type of prefix is pronominal. All around the block of languages with bound pronominal prefixes, there are languages with pronominal suffixes or enclitics.

Those languages in which the bound pronominal forms are least strongly connected to their host constituent – so that they can be regarded as enclitics, rather than suffixes – lie near the edge of a bound-pronominal area (see 11.3). This isogloss often does not coincide with strong genetic boundaries; for instance Margany and Gunya in south Queensland are dialects of one language, but Gunya has pronominal enclitics while Margany lacks them – the isogloss here runs between dialects of a language. Most of the languages in the Yolŋu subgroup, from north-east Arnhem Land, lack bound pronominals; but these are found in two languages on the edges of the Yolŋu area. Ritharŋu, the southernmost Yolŋu language, has developed pronominal ENclitics under areal pressure from its southerly neighbours Nunggubuyu and Ngandi (which have pronominal PREfixes); these are transparently reduced forms of the Yolŋu independent pronouns. Djinaŋ, in the north-westerly corner of the Yolŋu region, has moved in a different direction, and developed a system of pronominal PROclitics, that can be shown to be historically related – at slightly further remove than the Ritharŋu forms – from free-form pronouns in other Yolŋu languages; this was again due to areal pressure, from the prefixing languages to the west. Interestingly, Djinaŋ has almost completely lost the ergative inflection – which is shown by all other Yolŋu languages, including Ritharŋu – and the Djinaŋ accusative suffix is also used only very rarely. Djinaŋ has followed the typical development of nonPN languages – the evolution of complex verb structure, cross-referencing core NPs, has led to the loss of nominal case marking for core syntactic functions. Djinaŋ also has a single laminal stop–nasal series, like its nonPN neighbours to the west but unlike other members of the Yolŋu subgroup. (The position of the typically-PN Yolŋu subgroup in Eastern Arnhem Land, entirely surrounded by prefixing nonPN languages, is discussed in 8.5.)

It is likely that prefixing of pronominal and other forms to the verb developed in one or two northern languages and diffused over the whole nonPN region. The pattern of bound pronominal forms spread further, to languages in Central Australia, but here pronominal enclitics developed, consistent with the suffixing character of these languages. Nyigina, from the south-east Kimberleys, is especially interesting since it intervenes between the entirely suffixing PN block and the predominantly prefixing North Kimberley subgroup. Nyigina has verbal prefixes cross-referencing subject and suffixes referring to object; it has aspectual prefixes and tense suffixes; there is also an ergative inflection on nouns (this is unusual in having invariable form, *-di*, suggesting that it may be a recent innovation).

There are other instances of morphological phenomena that apply over all languages in a continuous region. Noun classes ('genders') are found in Banjalang, from north-east New South Wales, and in Dyirbal, from north-east Queensland. They also occur in a geographical block of genetically disparate languages stretching from the Kimberleys in Western Australia to Yanyuwa in the Gulf country of north-west Queensland (see 9.2.1). There are just a few languages that can incorporate a nominal root in a verbal word, generally between pronominal and/or tense prefixes and the verbal root (see 12.5); languages which have this property are not closely genetically related, but they are all spoken within a small region in the central north.

Pronominal systems that have different forms depending on the kin relationship and generation level of the people referred to (see 9.3) are found in Lardil, on Mornington Island, and also in a genetically heterogeneous set of languages, in the southern part of the Northern Territory and in South Australia, which do form a solid geographical block. This phenomenon is encountered in its most highly developed form in Adnyamadhanha, where there are no less than ten dual pronouns 'you and I', depending on particulars of moiety, kin and generation level; it tends to tail off, less and less elaborate distinctions being found as one moves away from this focus.

Probably a little more than half the languages of Australia have a distinction between 'inclusive' and 'exclusive' forms of first person non-singular pronouns: 'you and I' versus 'he/she and I'; the remainder have a single form 'we two'. The distribution of an inclusive/exclusive contrast in pronoun systems appears not to follow any geographical pattern; in each part of the continent there are some languages with this distinction and some lacking it. In 11.1.6 we put forward a suggestion about the pA pronoun system which could explain why some modern languages have developed an inclusive/exclusive distinction and some have not. The proto-system had the possibility of developing in either of two ways; for this parameter – unlike the other examples we have given above – a diffusional explanation is only partially relevant.

There are also examples of syntactic phenomena which are areally determined. In 13.6 we discuss the various means of forming coordinate and subordinate constructions, and indicating coreferentiality between clauses. Some languages have what is called 'switch-reference marking', where the verbal inflection will indicate both the type of subordination involved, and also whether the two clauses have the same or different subjects. The languages exhibiting switch-reference marking are genetically disparate but they do form a solid geographical block, stretching from the central west coast, across the western deserts, to South Australia, the southern part of the Northern Territory and into western Queensland (see 13.6.2).

The grammatical traits we have described involve the same sorts of categories and construction types occurring in each of the languages of a certain geographical region; the actual forms are likely to be different in each language. Thus, free pronouns have developed into bound clitics in a number of contiguous languages from the south-east; there has been a common general pattern of change but the bound forms that have evolved are quite different in each language. We can now turn to a different topic, and ask whether there has been any extensive borrowing of actual grammatical forms – affixes and the like – between languages in Australia.

Over most of the continent nouns and adjectives take case inflections which mark their function in the sentence. There is remarkable similarity in the form of these case inflections, so that there is little scope for the borrowing of forms between languages in most of the Pama-Nyungan region. The area in which borrowing of grammatical forms might be most evident is south-eastern Arnhem Land, where a number of PN and nonPN languages are in contiguity; they show more diversity – in case inflections and other grammatical features – than almost anywhere else in the continent. Jeffrey Heath has investigated subgrouping and areal relationships here and has concluded that some grammatical affixes have been borrowed between these languages. To mention just two of his many examples: (i) ablative *-wala* was taken over by Warndarang from Nunggubuyu; the ablative suffix is *-yani* ~ *-yanu* ~ *-yunu* in Mara and Alawa, Warndarang's close genetic relatives; (ii) the inchoative verbaliser *-thi* was taken over by Ngandi from its Yolŋu neighbour Ritharŋu; note that *-thi* has an irregular paradigm in Yolŋu languages but is conjugated like any other *i*-final stem in Ngandi. The inchoative suffix is *-ma* in Ngandi's sister language Nunggubuyu, and it is this form that Heath attributes to proto-Nunggubuyu-Ngandi.

In his seminal study of diffusion in eastern Arnhem Land, Heath considers the factors that control affix diffusion. He suggests that the critical parameters are not the grammatical role or semantic content of the affix, but rather its formal properties. He suggests the following as among the factors which favour diffusion: (i) syllabicity – a bound morpheme which is independently pronounceable (i.e. is composed of one or more syllables) is more likely to be borrowed than one which is not (but comprises, say, just a syllable-closing consonant); (ii) sharpness of boundaries – suppose Y occurs in the context X+Y, then its boundary is more clearly marked (and it is more likely to be borrowed) if this form contrasts simply with X, than if it only contrasts with X+Z; (iii) unifunctionality – an affix that carries a single piece of information (e.g. accusative) is more likely to be borrowed than one which is multifunctional (e.g. accusative+plural). The reader is referred to Heath's detailed study for a full statement and exemplification of these and other factors.

As Heath remarks, if we have diffusion on the scale he has found amongst languages that show the greatest structural differences in Australia, on what scale must morphological diffusion take place between languages that are much more similar in structure, as is the case over the major part of the continent? The effect of diffusion must have been mutual reinforcement of recurrent structural similarities; where languages do develop in different directions, through split and perhaps semi-isolation for a while, there will always be diffusional pressures tending to bring them back into line, structurally, with their neighbours. It is in view of this no easy matter to distinguish which types of linguistic similarity are genetic – due to common retention from a shared ancestor that was a descendant of pA – and which are merely areal – due to diffusion of a linguistic trait over some geographical region. We return to this question in the next section.

In 3.2 we mentioned that new ceremonials and songs, as well as technological skills, sociocultural innovations such as the subsection system, and rites such as circumcision and subincision, diffuse at a steady rate, largely along established trade routes. The spread of a feature of this type involves purposeful imitation of one's neighbours, the explicit and conscious adoption of a new technique or custom. Most diffusion of linguistic features is quite different in nature. Whether it involves the positive evolution of something new – the development of bound pronominal clitics, or the establishment of a laminal or apical contrast at the phonological level – or merely a loss – such as neutralisation of the distinction between long and short vowels – any phonological or grammatical diffusion is usually involuntary. People may just begin to speak like their neighbours in some way, without purposefully intending to do so, and without being aware that any change is taking place.

Linguistic diffusion is in some respects more similar to the spread of a genetic feature, than to the adoption of a new ceremonial, or extension to new tribes of a technique of axe-hafting. J. B. Birdsell has investigated, amongst other topics, the distribution of a type of tawny hair amongst Aboriginal Australian groups in the centre and west; the phenotypic frequency is very high in some Western Desert tribes, and tails off as one moves in any direction from this focus. Birdsell suggests that tawny hair may be due to a partially dominant gene which could have begun with a single mutation; it has then dispersed, moving at a fairly constant rate from one tribe to another as it was spread through cross-tribal marriage.

The ways in which linguistic traits spread are in some respects like cultural and in others like genetic diffusion. Vowel length may have been neutralised, or bound pronouns developed, in one language, and this feature may then gradually have spread, moving outwards from its point of origin. Its dispersion would be due partly to intermarriage – with a woman bringing her native language habits to the husband's community and passing some of them on to her children – and partly to intertribal ceremonies and trade meetings. The first factor is the cause of genetic spread, and the second the means by which cultural innovations are overtly copied. But, unlike genetic change, a new linguistic feature does not depend for its genesis on chance mutation. The forces within any linguistic system have an in-built propensity towards change of a certain type, and this can take place independently in closely related but geographically distant languages. A classic example was described in chapter 7 – the complex initial-dropping changes, that have taken place independently in several areas of the continent.

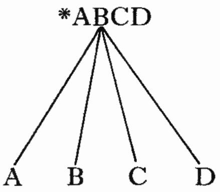
Proto-Australian probably had apico-alveolar and apico-postalveolar allophones, whose occurrence was conditioned by the nature of the preceding vowel (6.5.2). This phonetic distinction may have developed into a phonological contrast independently in two or three different western languages, and the trait could then have diffused from each focus so that the diffusion areas joined up, giving the continuous distribution shown in map 5. The fact that apical contrasts seem presently to be evolving in at least two eastern languages (Guugu Yimidhirr – see 6.6.1 – and Yir-Yoront – see notes to 6.5.2) provides support for our hypothesis that an apical contrast probably did not evolve in just ONE western language. Similar remarks apply to the other areal features we have discussed. Multigenesis is particularly apparent with features whose distribution is discontinuous, like bound pronouns (map 9). There is no evidence that this feature ever covered a continuous area; it is a recent innovation in all areas and must have begun in at least one language in the west, in at least one in the south-east, and in at least one in the far north-east; it lately evolved independently in Biri, from east Queensland, and given time would no doubt have diffused further from that focus.

8.5 Subgrouping

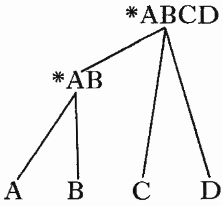
Proof that a group of languages comprises a genetic family involves the uncovering of systematic phonological and morphological correspondences, putting forward a hypothesis concerning structural features of the proto-language, and showing the regular ways in which each modern language has developed from the proto-system. The occurrence of recurrent irregularities in the modern languages is one of the best clues to a genetic connection. There is always a tendency to eliminate irregularities, often analogically extending a regular paradigm to replace them; where they do remain they constitute a precious clue to genetic relationship. In a number of Australian languages, especially some on the coastal fringes, we find minor conjugations that each contain just one or two monosyllabic verbs, inflecting in a different pattern from the open classes of polysyllabic verbal roots (see 12.2); there is remarkable correspondence between these irregular verbs in different languages, showing that the languages are related, and that these monosyllabic verbs must have occurred in pA.

Proving that a group of languages is genetically related, and constitute a single language family, can be a far from simple task. But it is invariably easier than the next step, that of trying to decide on possible subgrouping within the family. If we say that two languages A and B belong to a subgroup we are claiming that they had a period of common development, that is, that they are the joint descendants of a language *AB that was considerably later than the proto-language of the complete family. If no subgrouping can be shown there would be a 'family tree' of type (i); some of the possible subgroupings are shown in (ii) and (iii): (Tree diagrams of this type are not perfect models of the relationship between languages within a family; but they can conveniently summarise major splits.)

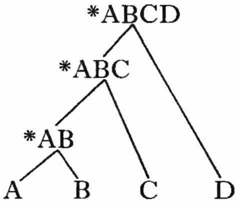
(i)



(ii)



(iii)



If two languages both contain the same irregularity this is strong proof that they are genetically related (irregularities are not as a rule borrowed). But it does not constitute evidence that they belong to the same subgroup. There is always a tendency – often, on an areal basis – to eliminate irregularities, and the negative fact that this has not reached two particular languages does not imply that they had any period of common development. For instance, we describe in 12.2 how Guugu Yimidhirr, at Cooktown, and Nyawaygi, at Ingham, both retain monosyllabic verbs with similar inflections; these do not occur in the languages that separate them – Gugu-Yalanji, Yidiny, Dyirbal and Warrgamay. But it seems that there is an areal tendency to reanalyse these verbs in terms of disyllabic roots – taking the original root plus an inflectional suffix as the new root e.g. *wu*+*ga* 'give-IMPERATIVE' becomes *wuga-* 'give' – that inflects in a regular pattern; the tendency has not yet reached Guugu Yimidhirr and Nyawaygi. There is no suggestion that, because of this retention, these two languages belong to the same subgroup.

It is also the case that if some irregularity has been eliminated in a number of modern languages it does not imply that they belong to the same subgroup; there is always analogical pressure that will tend to eliminate irregularities. Thus the observation that Gugu-Yalanji, Yidiny, Dyirbal and Warrgamay have – like many other Australian languages – recognised new disyllabic roots for pA monosyllabic verbs carries no implications concerning a close genetic connection.

If two languages belong to the same subgroup they must have undergone some of the same changes, in their development from pA. But it is certainly the case that languages belonging to the same family, that are of the same structural type, may change quite independently in almost identical ways (as in the initial-dropping changes – see 7.1). This propensity for convergent development in widely separated members of a language family seems particularly strong in Australia. We must, therefore, be wary of positing subgrouping entirely on the basis of shared phonological innovations.

The only clear criterion for subgrouping is shared innovations, but innovations of a distinctive nature that would not be likely to have happened independently in several different languages. Thus the elimination of monosyllabic verb roots takes place in a similar manner in many Australian languages – the new root is simply the old root plus an old inflectional affix, usually imperative or past tense (one language may use imperative for one verb and past tense for another). We can infer nothing about close genetic connection from this recurrent tendency.

The most difficult task in Australian linguistics is to decide whether a particular type of similarity between a group of languages is due to areal diffusion, or to convergent development; or is the result of a period of common historical development. Often it is a general structural characteristic which will diffuse; the way in which this is realised in different languages may vary. Thus, bound pronominal suffixes or enclitics have.developed over most western languages (map 9 in chapter 11); this is no criterion for a genetic connection. But the actual form of the suffixes, and the way in which they function in a sentence, varies; the forms can indicate subgrouping. Generally, the more unusual the innovation the more certain we can be that it did not diffuse from one language to another, or evolve independently in the two languages. For instance, both Walmatjari and Warlpiri have an auxiliary element, which generally occurs as the second constituent in a sentence; it involves a modal root and has no less than five orders of suffixes, indicating person and number of subject and object/indirect object etc. in a complex way. We describe the structure of the Walmatjari auxiliary in 11.3; the Warlpiri auxiliary has a similar form – but has simplified the structure somewhat – giving clear evidence that these two languages do constitute a subgroup. (This conclusion is supported by comparison of other parts of their grammars.)

We can recognise a number of low-level subgroups – like that which involves Walmatjari and Warlpiri – each including two or three languages (very occasionally more); many languages cannot be placed in subgroups even at this level. The 200 or so languages of Australia can be reduced to perhaps 50–100 subgroups in this way. It has not yet proved possible to arrange these subgroups into any higher-level groupings. (Ideally, we should like to be able to say that pA had just a handful of direct descendants, each of these again splitting into just a few languages, and so on, giving a highly structured family tree.) One difficulty is in distinguishing similarities that are due to areal diffusion from those that reflect genetic inheritance. It must be admitted, though, that the matter of subgrouping has not yet been systematically investigated. A detailed study has to be undertaken of the development of each language from the posited pA system, paying attention to noun inflections, pronouns and interrogatives, and verbs; the patterns of development must then be compared, to see if there is solid evidence for higher-level subgrouping. No one has yet attempted this task.

One point to be emphasised is that little should be inferred about the subgrouping of languages in Australia from vocabulary comparisons. Vocabulary is of course important but it is only one factor, to be considered in conjunction with grammatical and phonological comparison. The methods of lexicostatistics assume that basic vocabulary – one or two hundred of the most frequently occurring lexemes – are less prone to borrowing, and are overall replaced at a slower rate, than non-basic words. This appears not to be true in Australia, where words of all types are equally at risk to be tabooed, and to be replaced by borrowing. Lexicostatisticians have pointed out that for English and French, for instance, 6 per cent of the basic vocabulary, but 50 per cent of the non-basic lexicon are correspondences due to borrowing. Differences of this order between basic and non-basic vocabulary counts are not found in Australia. For instance, a comparison of neighbouring languages Warrgamay and Nyawaygi, from north-east Queensland, yields 44 per cent common or closely similar vocabulary on a standard 100-word list and 48 per cent on a fuller 500-item count. Many other lexical counts that I have made yield fairly constant figures irrespective of whether the sample is 100, 200, 500 or 2,000 items. It is hard to distinguish genetic-based from borrowed correspondences; but there is no evidence that basic items are less liable to be borrowed than non-basic terms in Australian languages.

It appears that if, in Australia, two rather different languages come into contiguity, they will borrow back and forth until the proportion of common lexemes gradually rises, and eventually makes up about 50 per cent (in practice, say 40–60 per cent) of each language's total vocabulary. If one tribe splits into two new tribes, each will taboo and replace words independently, and the percentage of common vocabulary will steadily drop until it reaches the 50 per cent 'equilibrium level'. Thus, if any two Australian languages have been in contact for a sufficiently long period we would expect their vocabularies to have 40–60 per cent identical or closely similar forms (as in the Warrgamay/Nyawaygi example mentioned above).

If two communities share more than 70 per cent common vocabulary they probably speak dialects of a single language; their grammars would normally be very close, leading to mutual intelligibility. A score of 60–70 per cent would generally suggest two distinct but closely related languages, belonging to the same subgroup; again, grammatical similarity should confirm this (grammars grow apart at a considerably slower rate than do vocabularies). A score of less than 40 per cent would imply that the two languages have been in contact for a relatively short time, and that they are not closely related genetically; their grammars would be expected to be quite dissimilar. It is when two neighbouring languages register a lexical score within the 'equilibrium range' of 40–60 per cent – as do the majority of contiguous languages in most parts of Australia – that we are unable even to draw tentative conclusions from lexical comparisons. Recourse must be had to detailed grammatical comparison to decide whether they are closely genetically related, but have been separate languages for a long enough period for their lexical scores to fall to this level, or whether they are genetically distant tongues, which have been in contact for a sufficient period for borrowing to bring the shared vocabulary up to the equilibrium level.

(There are no grounds on which we could estimate how long it would take for two adjacent languages to reach the 50 per cent equilibrium level; it must certainly be some thousands of years. There are of course many factors involved – relative similarities of phonological systems for the languages, types of social interaction, language prestige, nature and extent of tabooing – which do vary considerably between different languages in different parts of the continent. The problem is more complex than our summary here might suggest.)

It is of course important not to mistake typological for genetic classes. One point, in particular, needs to be emphasised. This is that Pama-Nyungan – although a useful label to cover the large class of Australian languages which have not undergone radical changes that involve the development of pronominal and other prefixes to the verb, and a generally polysynthetic structure – has not yet been shown to have any genetic significance. That is, there is no justification for talking of 'proto-Pama-Nyungan', as perhaps an early descendant of pA. There is nothing that could be attributed to a putative proto-Pama-Nyungan which could not equally validly be assigned to proto-Australian. There is no evidence of any shared innovations which would justify a period of common development for languages of the PN type.

It is on the basis of the occurrence of cognate forms with long vowels in scattered languages of the PN type that we posit proto-forms with long vowels, such as *NHaa-ŋ* 'to see, look at', *gaa-ŋ* 'to carry, bring, take' (12.2.2) and *ŋaan-* 'who' (11.4). NonPN languages generally do not show a length distinction, and have only *NHa*(*ŋ*), *ga*(*ŋ*) and *ŋan*. But there is no justification for suggesting that pA did not have a length contrast and that this was an innovation in 'proto-Pama-Nyungan'; there is no possible conditioning factor. A contrast between long and short vowels in initial syllables must be posited for pA; all nonPN languages, like most PN tongues, have simply neutralised this opposition. Considering another feature, the verbal reconstructions we undertake in chapter 12 are based, in the first place, on comparison of paradigms from modern PN languages. But the reconstructed monosyllabic forms, and their characteristic syllable-closing 'conjugation markers', can also be recognised in nonPN languages, indicating that these also are attributable to pA.

The occurrence of noun cases marking subject, object and the like is one characteristic of PN languages that distinguishes them from the nonPN class. But we have mentioned that languages in the nonPN area are highly innovative (whereas PN languages are in comparison rather conservative), having developed complex verbal structures; these have evolved in different ways in different languages within the nonPN region. The net result is that information concerning which noun phrase is subject and which is object is coded in the verb; it is natural in these circumstances that case marking on core nominal constituents should have become redundant, and have been dropped. In chapter 10 we suggest a limited system of three or four nominal cases for pA; PN languages have developed this system further, and now have systems of five to eight cases. Most nonPN languages have dropped the ergative and accusative case markings (although these can be recognised in a few languages of the nonPN area). However, they have mostly retained dative *-gu*, and have developed more local cases.

Similar pronominal forms recur in PN languages although, as we shall show in chapter 11, detailed comparison suggests reconstruction of a system that is semantically more similar to that of modern nonPN languages. Most nonPN languages have free-form pronouns of rather different shape, and there is much variation within this area. In many cases the original pronouns would have reduced to become verbal prefixes, and new independent forms may have evolved, in a slightly different way in each language.

The one genetic link we can salvage from the Pama-Nyungan hypothesis is that the Yolŋu subgroup (of about six closely related languages), from Eastern Arnhem Land – which is surrounded by nonPN prefixing languages – may have moved to its present location quite recently. A casual comparison indicates that it is most similar to the Western Desert language, spoken today 1,200 miles to the south-west (a detailed linguistic comparison of Yolŋu with other PN languages is urgently needed). This is supported by dermatoglyphic comparison of fingerprint patterns, showing that Yolŋu speakers are genetically closer to people from the centre, speaking PN languges, than to their present-day nonPN-speaking neighbours. Speakers of proto-Yolŋu almost certainly lived next to speakers of Central Australian languages, outside the prefixing area. They were probably isolated by the expansion and movement of tribes speaking nonPN languages, who pushed them up into their present enclave. This movement probably took place AFTER the pattern of prefixation had developed; it is likely that it was BEFORE pronominal suffixation developed in the centre. The basic Yolŋu type is to have no bound pronominals at all; but, as we mentioned in 8.4, diffusional pressure from their neighbours is having its effects – Ritharŋu, on the southern fringe, is developing pronominal enclitics, while Djinaŋ, on the north-western border, has pronominal proclitics (and has almost lost ergative and accusative case markings, repeating the development we suggested from pA to the modern nonPN type). There seems no doubt that, in time, Yolŋu will move more fully towards the structural type of its nonPN neighbours.

Finally, for an illustration of the genetic picture as it can be perceived in Australia, we can return to the languages spoken in Victoria and New South Wales, as shown in map 7. There was in fact probably more linguistic diversity in this region than in any part of the continent outside Arnhem Land.

Only one language from the south-east is still employed in daily discourse, Banjalang (W); this is used only by a few old and middle-aged people and is not being learnt as a full language by any children (although most Aboriginal Australians from this area include a few Banjalang words in English sentences). There were, in 1978, one or two old people with a good knowledge of H1, U3, V1, X1, X3, Y and Z. For A, P, Q and U2 there are old people who know a few score words, but could not produce sentences in the language. The remaining 25 languages are, as far as is known, quite extinct. Reliable or fairly reliable grammatical information is available on H1, U2, U3, V1, W, X1, X3, Y and Z; for A, F2, P, Q, U1 and X2 there are fairly extensive materials by nineteenth-century writers from which it is possible to infer some structural information. Most of the other languages are represented by a number of short vocabularies and a few grammatical notes, the latter almost all the work of the ubiquitous R. H. Mathews (see 1.3). For C, D, K, N and R there is no grammatical information available at all, only a few score poorly transcribed words; the materials available for K (Pallanganmiddang) are listed in 6.4.7.

On map 7 we separate languages that plainly belong to one low-level subgroup by a dotted line and designate them by numerical suffixes to a subgroup letter – thus H1, H2, H3. Languages that could conceivably be related in one subgroup, but on which there is insufficient evidence to enable a definite decision to be made, are separated by a dashed line. A solid boundary indicates that contiguous languages are possibly no more strongly related to each other than they are to any other Australian language. Commenting briefly on some of the likely and possible genetic groupings in this region:

[i] A, B, C, D and E, spoken along the lower Murray River, are typologically similar, and rather different from their neighbours on each side – the similarities include pronominal forms, phonotactic occurrence of *l* and *r* word-initially, and some critical lexemes. There is, however, too little information on all of these languages (except A) to permit a firm hypothesis of genetic connection. (They could conceivably just have been in contact for a considerable period, and formed a compact diffusion area.) We mentioned in 2.5 that A (Yaralde) is MOST similar to E (Yitha-Yitha) and that speakers of A have a legend that their ancestors used to live upstream but then travelled down the Murray River to the sea. To the west of A, B and C lie the Mount Lofty Ranges, which constitute a formidable linguistic boundary; the language of Adelaide,

100 miles west of A over the ranges, shows more similarities to the language of Perth, 1,300 miles further west, than it does to A. It is also significant that the circumcision boundary runs along the Mount Lofty Ranges; the rite was practised only by tribes on the western side.

[ii] F1 (Bungandij) and F2 (Kuurn Kopan Noot) plainly make up a subgroup, by virtue of similar pronominal forms and case inflections; there is insufficient information on verbal inflections to permit a full comparison but what is known bears out the hypothesis of close genetic relationship. In F2 all noun roots end in a consonant; final vowels are found only on numerals, time qualifiers and verbal and nominal inflections. Cognates in F1 which end in a vowel appear simply to have dropped the final consonant – thus F2 *dhaliny*, F1 *dhali* 'tongue'; F2 *barrij*, F1 *barri* 'water'.

[iii] All of the languages$_2$ in map 7 are set up on linguistic criteria; almost every one covers the political languages$_1$ (dialects) of a number of distinct tribes. H1 (Wemba-Wemba) is exceptional in being a single language common to more than a dozen tribes, over a considerable area (X1, X2 and X3 each cover a large territory, but these are less rich in food and water, and they support many fewer people than the H1 region). A dialect from one end of the H1 territory had about 70 per cent vocabulary in common with one at the opposite extreme, five or six tribes distant, and there was also strong grammatical similarity. Like F1 and F2, H1 made much use of bound pronominal suffixes. The northerly dialects also had free-form pronouns of the regular Australian type (1sg *ŋay* or *ŋaj*, 2sg *ŋin* etc.) but southerly dialects had lost these, and used instead the bound pronominal suffixes added to an invariable root *win-*, *wok-* or *waŋ-* (cf. 11.3). H2 (Wathawurrung) and H3 (Wuywurrung) show considerable grammatical and some lexical similarity to H1, and the three languages clearly form a subgroup (note that no further grouping is possible – no two of these languages are more closely related to each other than they are to the third). It is interesting that on purely lexical comparison H1 scores between 40 per cent and 50 per cent with each of F1, F2, H2 and H3, within the 'equilibrium range' (there are similar scores between F1 and F2, and H2 and H3). It is only detailed grammatical comparison which reveals shared innovations that point to a close genetic link between H1, H2 and H3; F1 and F2 are not closely – or not so closely – linked to the H subgroup but they must have been in contiguity for a considerable time to account for the borrowing, and other areal traits shared by all five languages.

Only a little information is available on language G (Kolijon or Kolakngat), which was spoken by a small tribe living around Lake Colac and into the inhospitable country towards Cape Otway. There is only a manuscript vocabulary of about 200 words from 1841; a published vocabulary of 19 words from 1842; one of 50 words from 1878; one of about 85 words together with a pronoun paradigm and a translation of the Lord's Prayer, gathered in the 1840s and published in 1898; and a vocabulary from 1862 which mingles words from G and from H2. It seems that G was a language distinct from its neighbours F2, H1 and H2; it has some similarities – lexical scores of 40–50 per cent – with each of them. Unlike F2 and H2, G freely allows lexemes to end in vowels. It is not possible, on the information available, to decide whether G belonged to the F or to the H subgroup, or belonged in a subgroup of its own.

[iv] Each of X1 (Gamilaraay), X2 (Wiradhuri) and X3 (Ngiyambaa) was spoken by several tribes, and is known in a number of dialects. These three languages have very similar grammars and clearly make up one subgroup; X2 and X3 may be closely related, as a subgroup within the subgroup. X2 and X3 share about 60 per cent of their vocabulary, and each has 40–50 per cent in common with X1.

There is one interesting phonotactic difference between these languages. In X1 and X3 words must end in a vowel or *n*, *l*, *rr* or *y*. In X2 there are, in addition, words ending in *nh*, *ny* and *ŋ*. Tamsin Donaldson found, in writing a grammar of X3, that it was necessary to set up underlying final nasal segments for some words; these condition certain morphological processes and the nasal segments occur before some types of affixes, but they are always deleted at the end of a word. The final segments that are needed in underlying forms for X3 correspond to the occurring final nasals in X3 cognates; compare *dhurruŋ*, the root and absolutive form for 'snake' in X2, with X3 forms absolutive *dhurru*, dative *dhurru-ŋ-gu* and comitative *dhurru-m-buwan*. This suggests that the proto-language had – in this instance – the phonotactics of X2, and that X1 and X3 have quite recently lost final laminal and velar nasals, probably due to areal influence from languages to the north.

8.6 Attempts at classification

In 1919 Wilhelm Schmidt published, in *Die Gliederung der Australischen Sprachen*, the first, and so far the only, classification of

Australian languages to take into account all available material and to be based on a careful comparison of both lexical and grammatical data. Schmidt and his students sifted meticulously through the full range of published sources (missing only a few quite obscure books and articles). He did not of course have access to the major manuscript collections – the G. A. Robinson papers (now in the Mitchell Library, Sydney), the R. H. Mathews field notebooks (now in the possession of A. P. Elkin), the A. W. Howitt papers (now in the State Library of Victoria), the Archibald Meston papers (now in the Oxley Library, Brisbane), the Daisy Bates papers (now in the National Library of Australia, Canberra) and others.

Little information was available at the time on northern languages and Schmidt's treatment of these was necessarily sketchy. But his subgrouping of southern languages was on the whole good, and the bibliographic information given for each language was excellent. Schmidt hoped that his work would put Australian linguistics on a sound scientific footing and indicated those languages, soon to become extinct, that were most in need of study. He stressed: 'there is an urgent need that a number of linguistically trained scholars in Australia should cooperate to undertake a systematic study of those Australian languages which are still completely unknown or insufficiently known . . . It might be thought that there would by now be in Australia both sufficient wealth, and interest in these matters, to set up funds which might, either alone or in association with public bodies, establish an institute which would undertake this task in a systematic manner, similar to the work done by the Smithsonian Institute for North America or the Linguistic Survey for India.' As we noted in 1.3, less work was undertaken in the following forty years than at any time in the past. When interest did revive, in the 1960s, scarcely any attention was paid to Schmidt's excellent classification and bibliography; it has the misfortune to be available only in German.

The first detailed tribal map, with a list of sources relating to each tribe, was published by N. B. Tindale in 1940; this was based on Tindale's own extensive fieldwork and on a fairly thorough search of the literature, particularly for now extinct tribes. This is basically a sound work, containing much accurate information. However, as must be inevitable with a work of this scope, it does contain some errors and omissions. A revised version published in 1974 corrects some of these but at the same time introduces further inconsistencies.

There were a number of nineteenth-century theories that the Australians were 'a mixed race', resulting from the successive invasion of peoples with relatively lighter and relatively darker skin hues. These were variously represented – partly on the basis of dubious lexical comparisons – as being Dravidian, Malay, Melanesian, Papuan etc. in origin (see particularly the work of John Mathew). The first serious attempt to classify Australians into racial types, on the basis of objective scientific measurements of physical dimension, blood groups, and the like, was that of J. B. Birdsell; his hypothesis, based on extensive fieldwork around Australia in 1938/9, was first put forward in the 1940s. Birdsell suggested a tri-hybrid origin. The earliest, Barrinean or negrito, stock was said to be found today in the Cairns rain forest (around Lake Barrine) and occurred also in Tasmania and in the south-west; it is characterised by diminutive height and crisp curly hair, among other features. The next wave was described as Murrayians, a physical type characterised by lighter skin colour and a tendency to baldness, today found in its strongest concentration around the Murray River. They were followed by Carpentarians, a taller race whose physical characteristics today predominate around the Gulf of Carpentaria. Tindale and Birdsell originally suggested that the languages of the Barrinean peoples around Cairns were unAustralian, on the basis of material in Mbabaram. But Mbabaram is an initial-dropping language, that has developed from a language of the regular Australian type (7.1); the other languages of Barrinean tribes – Jabugay, Yidiny and Dyirbal – are unexceptional in their phonology, grammar and lexicon. Fascinating as Birdsell's theory is, it appears not to correlate with any linguistic parameters.

In the 1960s a lexicostatistic classification of Australian languages was attempted. This was said to be based solely on mechanical comparison of 100-word lists; it appears that in most cases only the vocabularies of adjacent languages were compared. More than 70 per cent cognate scores were taken to indicate dialects of one language; 51–70 per cent – languages belonging to a single subgroup; 26–50 per cent – membership of the same group; 16–25 per cent – different groups of the same phylic family; and less than 15 per cent – different phylic families. It is plain that 'family' is here being used with a novel meaning, quite different from the traditional sense where it refers to a group of languages that can be shown to be genetically related through reconstruction of a proto-language, and the like. This procedure was applied quite mindlessly, so that a question 'is language X related to language Y?' was always provided with an answer 'yes' or 'no'. In fact, many questions of this nature have to be answered 'we don't know', simply because of the scanty data available. An example concerns the possible connection of language G with F2, H1 or H2 (in map 7), discussed in the last section. In the lexicostatistic classsification G is mysteriously classed as a dialect of H2; in fact it has about 50 per cent vocabulary and a bound pronominal suffix similar to H2, while 40 per cent vocabulary and free form pronouns resemble F2. Schmidt correctly classed G as a separate language, noting that 'the extremely sparse material available on Kolijon does not permit of any far-reaching conclusions'.

It is difficult to assess the lexicostatistic classification since no mention is made of the data on which it was based and not even the percentages themselves are stated. For northern and western languages the sources appear in many cases to have been field notes of Hale and O'Grady, and the classification here is useful; grammatical information was taken into account in a few – but by no means in all – cases. The classification of southern languages is very poor. It appears to be in part a marrying of Schmidt's classification with the tribal units listed by Tindale (Schmidt often did not give tribal names, but used the word for 'man' as a label). However, many errors were made – for instance Jab Wurrung (Chaap Wuurong) is said to be a dialect of F2, whereas it is, on both lexical and grammatical grounds, clearly a southerly dialect of H1 (Chaap Wurrong data come from James Dawson's study, one of the few references that was missed by Schmidt). It is probable that for some (or most) south-eastern languages there was no attempt at a detailed study of all source materials, but merely a superficial collation of Schmidt's and Tindale's named groups. Some tribal groups listed by Tindale for which there is absolutely no linguistic information at all were solemnly incorporated in the lexicostatistic classification – for instance, Warki and Wolgal.

The 'lexicostatistic' classification recognised 29 phylic families in Australia, later reduced to 26. One composed the Pama-Nyungan group; each of the 25 nonPN groups was held to be a 'phylic family' on a par with PN. No criteria other than lexicostatistics were given for these groups, although PN does in fact show considerable structural homogeneity. There was no attempt to establish genetic relationship in the established sense (in the way that the genetic unity of Indo-European has been proved, for instance) nor was there any admission that this was necessary. It was implied that word counts, of which those between phylic families scored 'less than 15%', had shown Australian languages 'to be all genetically interrelated, though some of them only rather tenuously'.

Worse was to follow. The Australian Institute of Aboriginal Studies sponsored and, in 1970, published *A revised linguistic survey of Australia* by W. J. and L. F. Oates. This took over the lexicostatistic classification, and attempted to give bibliographical information on each language. The authors appear not to have consulted Schmidt, since many of the works he listed are not mentioned. Unlike Schmidt, they appear not to have actually compared lexical forms between different vocabularies, but to have assigned vocabularies to languages simply on the basis of the place at which the vocabulary was gathered and the tribal territory in which that place lies according to Tindale's map. For instance, the vocabulary on pages 478–9 of Curr's *Australian race*, volume III, is labelled 'Upper Glenelg [River] and Wannon', that on pages 480–1 is from 'the Glenelg above Woodford' and that on pages 484–5 is from 'Dartmoor' (close to Woodford). Oates and Oates assign them all to F1. But if they had looked even cursorily at the vocabularies themselves, rather than their headings, they would have seen that they belong to three different languages – the first is F2, the second H1 and the third F1; all of these vocabularies were correctly assigned in Schmidt. To give another example, the only source quoted by Oates and Oates for Jaitmathang (language L on map 7) is material by John Bulmer in Smyth's *Aborigines of Victoria* (no page numbers are given). But all of the information by Bulmer in Smyth concerns languages M and Z; there are in fact two sets of linguistic information on L, one by John Mathew and one by R. H. Mathews, neither of them mentioned by Oates and Oates (Schmidt gives just the latter). Virtually every page of Oates and Oates contains a number of errors of this magnitude; a recently published *Supplement* corrects only a few of them, and introduces more. This work demonstrates the amateur tradition in Australian linguistics and bibliography at its very worst. Schmidt's classification remains the best account to date of the southern languages, and it is on this that future work must build.

Workers in other disciplines who wish to correlate genetic or cultural parameters with linguistic differences have made much use of the unsatisfactory lexicostatistic classification, because it is the ONLY attempt at subgrouping which is readily available. In fact, present knowledge of the relationships between Australian languages is not sufficient to justify any sort of fully articulated 'family tree' model. Further work on the historical development of Australian languages is urgently needed, to discover whether our present low-level subgroups can be linked together to form larger genetic groupings, and to investigate how genetic factors interrelate with areal traits.

It could perhaps be that the continual levelling due to diffusion of features of every sort has obscured those genetic splits that did take place in the development of Australian languages, so that it will not be possible to reconstruct them. Boas suggested that in North America 'it seems reasonable to suppose that the number of languages that have disappeared is very large'; similar comments may apply in Australia, especially in view of the considerable time Australian languages are thought to have been in the continent, and this again may make the retrieval of genetic splits more difficult, or even impossible (it is unlikely that a genetic connection could be proved between Scots Gaelic, Armenian and Sinhalese, for instance, if these were the only Indo-European languages for which information were available). It is likely that it will in many cases be impossible to distinguish between factors due to diffusion and those due to common descent (this is especially difficult where related languages maintain geographical contiguity). But there is need of detailed comparative work – taking care to separate out diffusional and genetically based similarities, insofar as this can be done – in order to investigate how much internal structure can be assigned to the Australian language family. It is important that future work on Australian linguistics should follow the established methodology of comparative linguistics, and refrain from jumping to hasty conclusions. As Kuryłowicz said 'it seems preferable to state the essence of the problem rather than to submit a gratuitous hypothesis based on some trite and superficial similarities'.

9

Word classes

In chapter 6 we described the similarities between Australian languages in phonemic systems, and in the phonotactic patterns of syllable structure. There is equally striking similarity, across the continent, between word classes (or parts of speech), between inflectional and derivational affixes, and in the way these grammatical elements are put together to form sentences.

We can illustrate typical Australian sentence structure with a Warrgamay example:

(1) *yibi+yibi+ϕ* *ŋulmburu+ŋgu* *wurrbi+bajun+du*
child+REDUP+ABS woman+ERG big+VERY+ERG
buudi+l+gani+y *malan+gu*
take+CONTIN+UNM river+ALL

This transitive sentence has four major constituents, whose grammatical structure can be described as follows:

[a] The subject noun phrase (NP) consists of the two words *ŋulmburuŋgu wurrbibajundu*. *ŋulmburu* 'woman' is the 'head' of the NP, and it is modified by an adjective *wurrbi* 'big'; adjectives typically follow nouns in Warrgamay, as in most Australian languages (although they CAN precede them). A derivational affix *-bajun* 'very' modifies the adjective.

An NP in transitive subject function must be marked by a case inflection that is called 'ergative'; in Warrgamay this case must be added to every word in the NP. Ergative inflection has several different forms, depending on the last segment of the stem to which it is attached; basically, it is *-ŋgu* after a vowel and *-du* after a consonant – thus *ŋulmburu+ŋgu wurrbi+bajun+du*. If we had only wanted to refer to 'a big woman', rather than 'a very big woman' then *-ŋgu* would have been added to *wurrbi – ŋulmburu + ŋgu wurrbi + ŋgu*.

[b] The object NP consists of just the noun *yibi* 'child'. This is reduplicated, *yibiyibi*, to indicate plurality, 'lots of children'. Reduplication is a very common device in most languages of the world (those of Europe are a notable exception) and commonly means 'many' or 'distributed all over the place' or something similar, varying a little in semantic import from language to language. In some Australian languages reduplication involves repeating just the first one or two syllables of the root, in others (as in Warrgamay) it consists in repeating the whole root.

A noun in Warrgamay is not normally specified for number. Thus *ŋulmburu* in *ŋulmburu + ŋgu wurrbi + bajun + du* means either 'woman' or 'women'. In English each noun must be marked for number, but in Australian languages whether reference is to 'one' or 'more than one' need not be stated. Explicit number specification can be made if required: plural (indicating three or more) is usually shown by reduplication – thus *ŋulmburu + ŋulmburu + ŋgu wurrbi + bajun + du* would be 'lots of very big women (did it)'; dual can often be shown by an affix or by a separate number adjective 'two'; singularity can be stressed by adding a number adjective 'one' (agreeing with the head noun in case).

Each NP in a sentence from an Australian language will generally have some case marking, indicating its function in the sentence (case marking is lacking on core NPs only in some of the polysynthetic nonPN languages, from the central north). Object function is marked (on nouns and adjectives) by 'absolutive case'; this generally has zero realisation – that is, it involves no addition to the stem (shown by the zero indicator ϕ in (1)). It is important to realise that just because there is no overt affix need not imply that there is no case marking. Most nouns in English must be in either plural number – normally shown by the suffix *-s*, as in *dogs* – or singular number – with zero marking e.g. *dog*. The form *dog* is not unspecified as to number; the absence of an overt ending clearly indicates singularity in contrast to the inclusion of *-s*, which shows plurality. So, in most Australian languages, the absence of any overt ending to the words in an NP indicates absolutive case, in contrast with the other (ergative, dative, allative, locative etc.) cases, all of which have non-zero realisations.

[c] The verbal constituent consists of the verb root *buudi-* 'take', together with a derivational affix – continuative *-l+gani* – forming a stem *buudilgani-* 'is taking'. Following this we must have a tense-type inflection on the verb. There are a number of possibilities – something that is quite finished could be shown by perfect inflection *-gi* ~ *-nyu*, an 'intention' could be indicated by future *-ma* ~ *-lma*, the verb in an imperative sentence must take inflection *ϕ* ~ *-ya*; and so on. Here the 'unmarked' inflection *-y* is added to *buudilgani*; it is used for reference to present time, or to habitual actions, or just in circumstances where there is no need to specify more exactly by using 'perfect' or 'future' (see 12.1).

[d] The final constituent is *malan+gu*, with *malan* 'small river, creek' bearing the allative case inflection *-gu*. Allative indicates motion towards a place.

We can now translate sentence (1). It is 'the very big woman (or women) is (/are) taking the children to the creek'.

The verb used here – *buudi-* 'take' – is transitive; this means that it must occur in a sentence with two NPs – a subject NP, whose constituent words are marked by ergative case, and an object NP, whose words are in absolutive case. (These comments apply to NPs which consist just of nouns and adjectives. There are different case markings on pronouns – see 9.7.) We can refer to these three elements as the 'core' of the sentence. One or more peripheral elements can be added, quite optionally, to any core. In (1) the additional NP *malan+gu* 'to the river' was included; if this were omitted we would still have an acceptable Warrgamay sentence (whereas if any of the core elements were left out the sentence would be grammatically incomplete). Other peripheral elements could be included instead of or as well as *malan+gu* – for instance the time qualifier *gayba* 'now', or an NP in ablative case (the converse of allative) indicating motion FROM some place e.g. *mija-nyiny* 'from the camp'.

Sentence (1) indicates the pattern of word structure that is typical of Australian languages:

ROOT (+one or more DERIVATIONAL affixes)+INFLECTION

Each word has a root, to which a number of derivational suffixes can be added. Derivational suffixes are optional – we had *-bajun* 'very' attached to *wurrbi* 'big' and *-l+gani-* 'continuative' onto *buudi-* 'take' but there were no derivational suffixes to *yibi* 'child', *ŋulmburu* 'woman' or *malan* 'river' in (1). Derivational suffixes sometimes just add semantic information to a root, without changing its grammatical status in any way – adding *-bajun* to the adjective root *wurrbi* produces a stem *wurrbibajun* that also functions as an adjective, and adding *-l+gani-* to the transitive verb root *buudi-* yields the stem *buudilgani-* which also functions transitively (i.e. it demands subject and object NPs).

Another type of derivational affix can form a stem whose grammatical possibilities differ from those of the underlying root. To an adjective in Warrgamay can be added *-(m)bi-*, deriving an intransitive verbal stem, or *-ma-*, deriving a transitive stem. Thus from the adjective root *wurrbi* 'big' we get *wurrbi+mbi-* 'become big' and *wurrbi+ma-* 'make big'.

Each word shows a final inflection. A noun or adjective must take a case ending, showing its function in the sentence (one possibility is absolutive, which in most Australian languages has zero realisation). A verb must have an inflection showing tense (e.g. present, past or future) or aspect (e.g. perfect) or mood (e.g. imperative) or the like.

The unanalysable lexical elements that are entered in the dictionary are referred to as roots (*yibi*, *buudi-* and so on). A derivational affix will form a stem from a root; then another derivational affix may form a further stem from a derived stem, and so on. From root *wurrbi* 'big' we can obtain stem *wurrbi+bajun* 'very big' and then *wurrbi+bajun+bi-* 'become very big'. After all derivational processes have applied the resulting stem must take an appropriate inflection, to form a completed word. Which sort of inflection is required depends on the grammatical status of the derived stem – *wurrbi+bajun* 'very big' is an adjectival stem and so must take a case inflection, as in (1), whereas *wurrbi+mbi-* 'become big' and *wurrbi+bajun+bi-* 'become very big' are verbal stems and must take a verbal inflection, as in:

(2) *ŋulmburu* *wurrbi+bajun+bi+gi*
woman+ABS big+VERY+INTRANSITIVE-VERBALISER+PERFECT
'[The] woman has become very big.'

Thus, a stem is a word lacking only its final inflection. (A root is a minimal stem, containing no derivational suffixes.)

Most Pama-Nyungan languages conform exactly to this pattern; they do not as a rule show any prefixes to the root. NonPN languages can differ in various ways. Most nonPN languages also have prefixes, always in addition to an array of suffixes; prefixes usually involve markers of gender and/or pronominal elements that indicate 'subject/object' when attached to a verb, or 'possessor' when attached to a noun (e.g. 'I+run+past' = 'I ran' and 'I+dog' = 'my dog'). In the most highly polysynthetic languages (Maung and also Tiwi, for instance) tense and other categories may also be carried by prefixes.

The inclusion of a case suffix on every word in an NP means that the function of the NP in the sentence – whether it is subject or object or refers to something towards which motion is directed etc. – is fully specified by the inflection. Many languages, including English, have fixed word order to distinguish subject from object, and so on. But in most Australian languages the words can, potentially, occur in ANY order in a sentence, with no possibility of confusion. Thus, instead of (1) we might hear:

(3) *ŋulmburu+ŋgu buudi+l+gani+y malan+gu yibi+yibi+ϕ wurrbi+bajun+du*

with exactly the same meaning: 'the very big woman (or women) is (/are) taking the children to the river'. Notice here that the two words in the subject NP are widely separated; but the inclusion of the ergative inflection *-ŋgu*~*-du* on each clearly distinguishes them as belonging to the same NP, which is functioning as subject in a transitive sentence. (There is discussion of word order in Australian languages in 13.2.)

There are some Australian languages which normally add the case inflection only to the last word in an NP when all the NP constituents do occur next to each other (the Western Desert language is an example of this type); but case will be added to every word of an NP when these are distributed through the sentence, as in (3).

Prefixing languages in the central north (the nonPN area) contain in the verb information about the person, number and gender class of subject and object NPs. Most of these languages do have case inflections marking core syntactic functions, but they are – in some languages – used only where ambiguity would otherwise result. There need be no marking on either NP in 'the man saw the river' (since rivers do not observe men) but ergative would have to be included on 'the man' in 'the man saw the boy', in order to distinguish it from 'the boy saw the man'.

9.1 Parts of speech

Australian languages generally show around nine or ten distinct 'parts of speech' (or 'word classes'). Each root belongs to a single class. This is an important point, and one in which Australian languages differ from languages such as English, where a single root may function as a noun or as a transitive verb (*knife* or *wound* or *punch*), as a noun or as an intransitive verb (*snow* or *laugh* or *talk*), as a transitive or intransitive verb (*eat* or *ask*), or sometimes as all three (*march* or *break*). A root in an Australian language will be strictly classed as a noun, OR as an intransitive verb, OR as a transitive verb; only in very rare cases can a root belong to more than one class. There are usually ways of deriving verbs from nouns, transitive verbs from intransitive verbs, and so on – but these almost always involve the addition of an explicit derivational suffix (along the lines of Warrgamay -*(m)bi*- 'become' and -*ma*- 'make').

The most typical set of word classes required for an Australian language is:

$$\left.\begin{array}{l}\text{noun}\\ \text{adjective}\end{array}\right\}\text{nominal}$$
pronoun/demonstrative
$$\left.\begin{array}{l}\text{transitive verb}\\ \text{intransitive verb}\end{array}\right\}\text{verb}$$
adverb(al)
locational qualifier
time qualifier
particle
interjection

Each word class has its own set of inflections; it is generally an easy matter to check which class a given root belongs to, simply by examining the endings it can take. (Noun and adjective generally take the same inflections – they are discussed further in 9.2 below.) Particles ('not', 'maybe' etc.) and interjections are set off from the remaining classes in that they do not as a rule have any inflections.

In the remainder of this chapter we summarise the typical semantic content of these word classes, and mention some notable features. The next three chapters take nouns, pronouns and verbs in turn, surveying their inflectional systems and putting forward suggestions about the grammatical properties of these major classes in proto-Australian.

Pronoun/demonstrative, particle and interjection are generally closed classes, with a small number of members – new words could not easily be added to these classes by speakers of the language. The remaining classes are, in most Australian languages, open – they cannot be exhaustively listed and they can be added to (just as new nouns, verbs and adjectives are continually being introduced into English).

Note that Australian languages seldom have anything that could reasonably be described as 'articles' or 'prepositions'. Definite specification can be achieved by the use of demonstratives, but is often established simply by the context; the use of bound pronominal suffixes to indicate definiteness of reference in Ngiyambaa is mentioned in 11.3. The semantic load carried by prepositions in other languages is very effectively handled by the case system, in most Australian languages.

9.2 Nominals

Nouns and adjectives generally show identical morphological possibilities in Australian languages. That is, they can take the same set of inflections, and also the same derivational suffixes. It is useful to employ the term 'nominal' to cover both nouns and adjectives; we can then refer to the case system as 'nominal inflections'.

9.2.1 *Nouns*

The open class of nouns covers all (touchable or drawable) concrete objects. It also includes terms classifying humans by age/sex groups – 'pubescent girl', 'single man above normal age for marriage' – and a rich set of kin terms. There are nouns referring to mythical spirits, to ceremonies, to language and song styles, and to types of noise (see 5.2.1).

Some Australian languages have scarcely any abstract nouns, these concepts being rendered entirely by adjective and verb roots (which can, as a rule, be nominalised by an appropriate derivational suffix). Other languages do have a range of abstract nouns – 'desire', 'thought', 'heat', 'anger', 'fear', 'sleepiness', 'sickness', 'promise', 'gift', being typical members.

We mentioned in 5.2 that many Australian languages have a set of generic nouns. Typically, a specific noun will be accompanied by the appropriate generic in any NP in which it occurs – sentences can be literally translated as 'the PERSON old man speared an ANIMAL wallaby', and so on. Some generic forms – including *minya* 'edible animal' and *mayi* 'non-flesh food (including honey)' – recur in many languages. The semantic system of generic nouns in a specific language usually establishes a taxonomic classification of flora, fauna and other areas referred to by nominal forms.

Some northern languages show a grammatical system of noun classes (an extended 'gender system') that has probably developed out of the syntactic pattern of including generic and specific nouns within an NP. Most languages of Arnhem Land and the North Kimberleys have between four and eight classes, each marked by a prefix to the noun. Adjectives usually take the same prefix as the noun they are modifying, and the noun class prefix of a subject or object noun will often be cross-referenced onto the verb – all this is very similar to the noun class systems of Bantu languages. There is evidence that the noun class prefixes developed out of generic nouns. Originally, a generic noun occurred in syntactic construction with a specific noun, most frequently immediately preceding it; it has now reduced to be an obligatory morphological prefix to the specific noun. All of these northern languages have one class referring exclusively (or almost exclusively) to edible non-flesh food, including honey; the prefix is *ma-*, *mi-* or *m-*, reduced forms of the original generic noun *mayi*.

Noun classes have developed in a quite different way in Dyirbal, on the north-east coast, separated by almost a thousand miles from the Arnhem Land noun class region. Noun class in Dyirbal is shown by a suffix to a determiner that accompanies a noun in an NP; we find masculine *bayi*, feminine *balan* and neuter *bala*, functioning in much the same way as articles in German or French. There is a fourth class in Dyirbal, with determiner *balam*, referring to edible non-flesh food (including honey). It is likely that the suffix *-m* in *balam* is also a reflex of the original generic term *mayi* (Dyirbal's neighbours have not developed a system of noun classes, and do show the generic *mayi*). It is likely that a pre-Dyirbal syntactic pattern of 'determiner, generic noun, specific noun' has developed into 'determiner + noun-class-suffix, specific noun'. For examples illustrating the operation of determiners in modern Dyirbal see sentences (8)–(9) below; (7) in chapter 3; (1) in Chapter 5; (19)–(20), (27)–(29) in chapter 10; (8) in chapter 12; and (1), (4), (6)–(9), (13)–(15). (23)–(24), (27)–(33) in chapter 13.

The only other noun-class-like system known is in some dialects of Banjalang, spoken in northern New South Wales and geographically far removed from both the Arnhem Land group and from Dyirbal.

The semantic basis of noun class membership is subtle and fascinating, interrelating often with the mythic role of animals, and with beliefs concerning natural phenomena. In Dyirbal, for instance, most non-human animates are placed in the 'masculine' class; but birds are believed to be the spirits of dead human females and are grammatically classed as 'feminine'. To quote just one further example, in Dyirbal myths the moon and sun are represented as husband and wife – we thus have *bayi gagara* 'moon' and *balan garri* 'sun'.

9.2.2 *Adjectives*

Australian languages typically have a rich open class of adjectives with some hundreds of members. Adjectives cover value, age, dimension, posture, speed, physical characteristics of people ('tired', 'sick', 'lame') and things ('sharp', 'sweet', 'rough') and also mental attitudes and states ('happy', 'sad', 'ashamed', 'jealous', 'greedy', 'overconfident' and many more) – see 5.2.1. It is quite usual to get distinct adjectives corresponding to what would be just verbal participles in English – there may be adjectives 'finished', 'covered', 'split' that are totally different in form from the verbs 'to finish', 'to cover' and 'to split'.

There are often only two, and probably never more than four, basic colour terms ('black', 'white', sometimes 'red' and sometimes also 'green'). Common nouns will be used quite adequately to cover other colour descriptions – e.g. 'sun' or 'red clay' may describe different shades of red, in languages with only two colour adjectives.

In most Australian languages nouns and adjectives take the same inflections, and they can generally occur in either order in an NP. A noun phrase can consist of just a noun, or noun plus adjective, or else of just an adjective (there is no requirement that a 'dummy noun' must be included, as in English where we must say *the big one*, rather than just *the big*). Sometimes derivational possibilities may differ – as in Dhuwala/Dhuwal where the suffix *-mirri* 'having' can be productively added to nouns, forming a derived adjective, but not to adjectives – but in most languages nouns and adjectives can take the same derivational affixes. It can thus be difficult to formulate an entirely grammatical criterion to distinguish adjectives from nouns.

In languages with noun classes (that is, an extended gender system) each noun can as a rule occur with only one class marker, whereas most adjectives can occur with any of the markers – an NP consisting just of 'big' could be referring to a big person, to a big animal, to a big vegetable, or to a big tree or stone, and 'big' will take the appropriate prefix. (This is also the principal criterion for recognising adjectives in classical Indo-European languages, such as Latin.) A similar criterion applies in languages that tend to include a lexical generic noun in each NP – a specific noun can only occur with one (or at most two or three) of the generics whereas most adjectives can occur with any of them.

Semantic criteria can be brought in to distinguish adjective from noun in languages where there are no sure grammatical tests. A noun will refer to a class of objects that have a certain defining characteristic, whereas an adjective describes a particular quality that can occur in a wide range of objects but is seldom a necessary quality (a stone is always a stone and a man a man, but anything can be hot or cold, something that is cold can become hot, and so on). Most nominals can be unambiguously classified as noun or adjective on semantic grounds; there are likely to be just a few forms that stand on the borderline, as it were, and combine semantic and grammatical features of noun and adjective (a root 'hunger/hungry' is equivocal in this way in some Australian languages).

Once noun and adjective classes have been recognised on semantic criteria, we can note that an adjective will USUALLY occur with a noun in an NP, although it CAN occur alone; and that it will USUALLY follow the noun it modifies, although it CAN precede it. There are other grammatical corollaries, and they are also of a more/less statistical nature, rather than being either/or properties that could be used as defining criteria; in 12.4 we discuss derivational suffixes that can derive a verbal stem from any nominal root, but occur with adjectives much more frequently than with nouns.

9.3 Pronouns and deictics

Almost every Australian language has singular, dual and plural first and second person pronouns – 'I', 'we two' and 'we all (three or more)'; 'you (singular)', 'you two' and 'you all (three or more)'. Just two or three languages are known that lack the dual – Banjalang in north-east New South Wales, Jabugay in north-east Queensland, Maung on Goulburn Island, off the Arnhem Land coast. There are some languages that also have 'trial' or 'paucal' pronouns – the system then comprises singular 'I', dual 'we two', either trial 'we three' or paucal 'we few (usually from three up to around six)', and plural 'we all'; and similarly in the second person. Four-term number systems occur in the languages of the Kimberleys (Worora, Ungarinyin), in some languages from the Northern Territory (Anindilyakwa, Nunggubuyu, Murinypata), and in some languages from Victoria and from South Australia.

Perhaps a little over half the languages of the continent have distinct 'inclusive' and 'exclusive' varieties of the non-singular first person pronouns. There will then be two separate duals – inclusive 'you and I' and exclusive 'I and someone other than you' – and plurals – inclusive 'you and I and one or more others' and exclusive 'I and two or more others, not including you'.

A few languages have even more complex pronominal systems, with further distinctions of form depending on the relationship between the people referred to. In Lardil, for instance, one type of non-singular pronoun is used when the people referred to are in the same generation level or are two levels apart, and another type of pronoun is used if they are one or three generations apart. The dual system is:

first person inclusive dual 'you and I'	*ŋaku-rri*	*ŋaku-ni*
first person exclusive dual 'he and I'	*nya-rri*	*nya-anki*
second person dual 'you two'	*ki-rri*	*nyi-inki*
third person dual 'them two'	*pi-rri*	*rni-inki*
	two people in same generation level, or two levels apart e.g. ego and brother/sister/grandparent grandchild	two people in alternate generation levels, or three levels apart e.g. ego and parent/child/great-grandparent/great-grandchild

Plural pronouns in Lardil show the same distinctions. The most complex pronominal systems of this type are found in South Australia (see 8.4).

Many Australian languages do not have anything that could strictly be called 'third person pronouns', on a par with first and second person forms. Like many languages from other parts of the world there is instead a system of demonstrative pronouns, which often involve obligatory specification of whether the person referred to is near to or distant from the speaker, sometimes whether he is visible or not, and so on. These items combine a deictic semantic role – referring to 'this' or 'that' in the environment of the utterance – with some of the syntactic properties of third person pronouns; they can typically make up an NP by themselves (as an alternative to a head noun), or else occur with a noun in an NP.

First and second person pronouns usually have quite different systems of case inflection from nouns and adjectives – there is discussion of this in 9.7. Demonstrative/third person pronouns sometimes inflect in the same way as first and second person forms; in other languages they inflect on the nominal pattern; and there is a fair-sized set of languages in which demonstrative/third person forms inflect differently from both nominals and from other pronouns.

Distinct masculine and feminine 'third person pronouns' are unusual in Australia; they are found in a group of languages around the south-west corner of the Gulf of Carpentaria (Yanyuwa, Alawa, Anindilyakwa) and in one or two languages from other parts (Tiwi, Rembarrnga, Gunibidji, Diyari and the Western Torres Straits language, for instance). There are usually dual and plural third person pronouns – following whatever number distinctions are shown by first and second persons – but deictic distinctions (and gender, if this is present) are generally confined to the singular forms.

It is normal in Australian languages to encounter a set of forms that can have indefinite or interrogative force. There is generally one form that can be glossed 'who' or 'someone', in different instances of use, and another that means 'what' or 'something'; the actual lexical forms that recur are surveyed in 11.4.

In almost every language there are distinct forms for 'someone/who' and 'something/what', often the only place in the grammar at which a contrast 'human'/'non-human' is evident. Yukulta, from the Gulf country, is unusual in that it has a single form *ŋaga* covering both 'who' and 'what'; but it is also unusual in having distinct forms *jaŋgin* 'someone' and *ŋagayana* 'something' ('someone' is not analysable but 'something' involves the general interrogative *ŋaga* together with *-yana* 'maybe').

9.4 Verbs

9.4.1 *Transitivity*

Each Australian language makes a strict division between transitive and intransitive verbs. A transitive stem requires a subject and an object NP if the sentence in which it occurs is to have a complete sense; an intransitive stem requires only a single, subject, NP. Each root has a fixed transitivity value; contrast this with English where many verbs can have either transitivity value in a suitable sentence e.g. *the door opened/I opened the door*. There are usually derivational suffixes which can form a transitive stem from an intrasitive root, or vice versa. The important point is that any change in transitivity value must as a rule be marked by a non-zero derivational affix, in an Australian language.

In Yidiny, for instance, *bala-n* 'to be open' is an intransitive root, as in:

(4)	*yiŋu*	*bulmba*	*bala+ŋ*
	THIS+ABS	house+ABS	open+PRES
	'This house is open.'		

Adding the transitivising suffix *-ŋa-l* forms a transitive stem *bala+ŋa-l*, as in:

(5)	*waguja+ŋgu*	*yiŋu*	*bulmba*	*bala+ŋa+l*
	man+ERG	THIS+ABS	house+ABS	open+TRANSITIVISER+ PRES
	'A man is opening up this house.'			

The Yidiny root *wawa-l* 'look at, see' is transitive; it must occur with both subject and object NPs:

(6)	*(nyundu)*	*yiŋu*	*bulmba*	*wawa*
	you+NOM	THIS+ABS	house+ABS	look-at+IMP
	'(You) look at this house!'			

The addition of derivational suffix *-Vji-n* (where *V* is identical to the final vowel of the verb root) derives an intransitive stem *wawa+aji-n*, that can form a sentence with just a subject NP:

(7)	*(nyundu)*	*wawa+aji+n*
	you+NOM	look at+INTRANSITIVISER+IMP
	'(You) look!'	

9.4.2 *Conjugations*

The normal pattern in Australian languages is for each tense or similar inflection to have a number of different forms. A root which takes a certain form of present tense will take a certain form of imperative; a root that takes another form of present tense will take another form of imperative, and so on. We say that verb roots fall into a number of conjugational classes, and that most inflections have a different shape in each conjugation. The sentences just given from Yidiny show present and imperative forms in the two major conjugations:

	conjugation 1	conjugation 2
	e.g. *bala-n* 'to be open'	e.g. *wawa-l* 'to see, look at'
present tense	-*ŋ*	-*l*
imperative	-*n*	-*ϕ*

We must know which conjugation a given root belongs to, in order to inflect it correctly. This can be shown by attaching -*n* to a conjugation 1 root and -*l* to one from conjugation 2; the roots can be entered in the lexicon as *bala-n* and *wawa-l* respectively. These 'conjugation markers' -*n* and -*l* often occur between a root and the longer inflections – e.g. apprehensional forms in Yidiny are ROOT+*n*+*ji* and ROOT+*l*+*ji* respectively (see 12.1, 12.2).

There is often a correlation between conjugation class and transitivity value. In Yidiny most verbs in conjugation 1 are intransitive and the great majority of those in conjugation 2 are transitive. But this is only a statistical connection; there are plenty of exceptions – transitive *buga-n* 'to eat', intransitive *burrwa-l* 'to jump' to mention just two – and it is impossible to predict transitivity value from conjugation membership (or vice versa).

All the stems formed by a given derivational affix fall into the same conjugation (irrespective of the conjugational membership of the underlying root). The intransitiviser -*Vji*- always forms a conjugation 1 stem – we get *wawa*+*aji-n* 'look' from *wawa-l* 'look at, see' and *buga*+*aji-n* 'eat (intransitive)' from *buga-n* 'eat (transitive)'. In a similar manner, transitiviser -*ŋa*- always forms a conjugation 2 stem.

Australian languages can have as many as seven conjugations; some of these classes may have only a handful of members but there are usually two open conjugations, one predominantly transitive and one predominantly intransitive. Yidiny has three conjugations – the two mentioned and a small class with conjugation marker -*r* (for which only about twenty members are known). Many languages have just two conjugations. And there are a number – some in the centre and some in the south-east – with a single conjugation; here each tense and other inflection has constant form, which occurs with all types of verbal roots and stems. In chapter 12 we describe and compare these conjugational patterns, attempting to reconstruct the conjugational system of proto-Australian and the changes that have taken place in the development of modern languages.

9.4.3 *Number of verbs*

Languages in the eastern states typically have many hundreds of monomorphemic verb roots. This is in marked contrast with most languages from the west which tend to have a smallish number of unanalysable roots but many verbal compounds that contain these roots as second member. For instance, a 1,500-item vocabulary of the most common words in Dyirbal, from the east coast, contains about 400 unanalysable verb roots, and only a handful of compounds; new monomorphemic verbs are encountered on each further day of fieldwork. But a 1,500-item vocabulary of Warlpiri, from the Northern Territory/Western Australia border, involves only around 110 simple verb roots; it is not likely that there are many more monomorphemic verbs in the language. The Warlpiri vocabulary does include a large number of compound verbs. To quote just one example, it has *kuntul*+*karri* 'to cough', from the noun *kuntul(pa)* 'a cough, cold' and verb root *karri-* 'to stand'; Dyirbal has a monomorphemic root *nyija-y* 'to cough'.

Warlpiri's westerly neighbour Walmatjari has only about forty monomorphemic verbs. Gurindji, to the north of Warlpiri, has no more than thirty. Further north still, some languages in the Kimberleys and the Daly River area have only around a dozen roots to which can be added verbal inflections. There are very many compounds involving each of these roots (which are sometimes referred to as 'auxiliaries'). Thus, any type of verb of hitting is likely to involve the simple root *bu-* 'hit' as final element, and so on. (In some languages the semantic basis of compounding appears quite systematic; in other languages it is difficult to find a semantic connection between many compound verbs and the meaning of the final element, when used in isolation.)

Each language, however many monomorphemic verbs it has, will always have an array of intransitive roots or stems to cover motion and rest ('come', 'go', 'sit', 'fall', 'jump', and so on), speaking, crying, breaking, and the like. And there are always transitive roots or stems for hitting, cutting, taking, telling, giving, eating, seeing, and other areas. Generally, around one-third of both monomorphemic roots and compound stems are intransitive, the remainder being transitive – both Dyirbal and Warlpiri show about this proportion. There is, however, variation around this norm – in Diyari, from South Australia, just over half of the 200 most common roots are intransitive while in Walmatjari only about 15 per cent of the monomorphemic roots are intransitive. Languages that differ markedly from 'one-third intransitive' norm can have surprising transitivity values. Guugu Yimidhirr, which has less than a third of its verb roots intransitive, has only a transitive root for 'laugh' – *diiŋa-l* 'laugh at'. If one does not want to specify what provoked the laughter (normally referred to by the object NP) then *diiŋa-l* must be used with the intransitivising derivational suffix *-Vdhi-* (cognate with Yidiny *-Vji-n*, mentioned above).

The majority of verb roots in Australian languages tend to have rather concrete meanings, referring to events that can be acted out, or represented in drawing. There are usually just a few verbs that have more abstract meanings or that refer to mental attitudes e.g. 'tempt', 'encourage', 'praise', 'blame', 'tease', 'worry about', 'feel sorry for', 'choose the best of'. Some languages have verbs 'like', 'dislike', but often this is expressed by an adjective derived from a noun meaning 'desire' or 'happiness'. There is sometimes a monomorphemic verb 'to dream' (otherwise, there will be an adjective 'dreaming' or a noun 'dream') and often a verb 'to think' – Yidiny has the transitive root *ŋuni-n* 'to think about', for instance, but Dyirbal uses the reflexive form, *ŋamba+yirri-y*, of *ŋamba-l* 'to listen to', literally 'listen to oneself' = 'think'. Verbs with meanings 'imagine', 'know' or 'understand' occur in only a few Australian languages; in others there can be an adjective 'knowing' – sometimes based on the noun 'ear' (see 5.2.3) – that has a semantic role similar to that of the verbs 'know', 'learn' and 'teach' in English. Note also that in Ngiyambaa there is a special counterfactual clitic (9.6) 'imagine'; and in Yukulta there is a special grammatical construction for any imagined event (see 13.4.1).

9.4.4 *Adverbals*

Some Australian languages have a set of roots which provide semantic modification for a verb in the same way that an adjective modifies a noun. In Dyirbal, for instance, this set includes 'do slowly', 'do quickly', 'do properly', 'do badly', 'start to do', 'finish doing', 'fail to do', 'do again', 'do something that shouldn't be done'. These roots show exactly the same morphological possibilities as verbs. They will usually occur with a regular verb in a sentence, and must agree with it in transitivity value and in final inflection, as in the Dyirbal sentence:

(8)	*bayi*	*yara*	*wundi+nyu*	*bani+nyu*
	HE+ABS	man+ABS	take a long time+PRES	come+PRES

'The man is taking a long time to come (because, say, the road is long and winding).'

However, a sentence could have *wundi+nyu* as the sole verbal form (and would then mean 'the man is taking a long time to do something').

Adverbals could be regarded as a special subclass of verbs. But verb and adverbal can be distinguished, on semantic grounds, just as noun and adjective can – a verb refers to an activity or state, and an adverb to some secondary characteristic which can apply to any of a wide range of activities (each of 'to cut', 'to carry', 'to cook', 'to tell', 'to give', 'to kiss' etc. can be modified by 'to do properly'). Once two classes are recognised, on semantic grounds, certain grammatical tendencies can be noted – an adverbal CAN be the only verbal form in a sentence, but it USUALLY accompanies a full verb, and so on.

Some Australian languages have a separate class of non-inflecting adverbs, quite distinct from verbs; Dhuwala/Dhuwal, for example, has 'slowly', 'quickly' and 'carefully/gently', among others. It is rare to find adjectives which can also have an adverbal function (although this is encountered in Diyari), or even adverbs explicitly derived from adjectives.

9.5 Other word classes

9.5.1 *Locational qualifiers*

A noun or adjective can generally take a whole range of case inflections that will indicate whether it is subject, object or indirect object of a sentence, or refers to the instrument with which something is done, or the cause of some state, or whether something was done at or to or from a place referred to by it. A full discussion of nominal case systems is included in the next chapter.

Australian languages often have another smallish word class whose members can take only a subset of the nominal cases – usually just the three local cases: locative ('at'), allative (motion 'to') and ablative (motion 'from'). This class of 'locational qualifiers' will typically cover 'up', 'down'; 'north', 'south', 'east' and 'west'; 'on top', 'underneath', 'behind', 'inside', 'across the river', 'near', 'far', and so on.

Sometimes locational qualifiers have local case inflections that are similar, but not identical, to local cases on nominals. In Yidiny (see 10.1), for instance, ablative is *-mu*~*-m* on nominals and also on locational items, locative is *-la*~*-da* on nominals but involves a zero inflection on locational qualifiers, allative is also *-la*~*-da* on nominals but generally *-gu* with locational qualifiers. This, together with semantic considerations, is sufficient for locational qualifiers to be considered a distinct part of speech.

There is always an interrogative locational 'where'; this will have locational, allative and ablative forms ('where at', 'whither' and 'whence'), but they are often morphologically irregular, NOT involving the addition of normal local case affixes to an invariable root. Typical forms 'where' are discussed in 11.4.

9.5.2 *Time qualifiers*

There are two kinds of lexical root that provide temporal qualification of a sentence – those indicating duration ('for a long time', 'for a short time', 'all the time') and those referring to some point in time ('evening', 'tomorrow', 'many years ago', and so on). Only point-time words will take inflections, as a rule, and these two types of temporal qualifier can be grouped together as a single part of speech only on semantic grounds.

Point-time qualifiers can generally take two inflectional suffixes, one indicating 'time until' and one 'time since'. These are often similar to – and sometimes identical with – allative and ablative case suffixes on nominals and/or on locational qualifiers. The root will generally be used without suffix to indicate 'time at', but sometimes an inflection similar to nominal locative can be used, with at least some time qualifiers.

Time qualifiers always have 'today' as one semantic focus – giving 'tomorrow', 'yesterday' and so on. Some languages have 'now' as a further focus; in Dyirbal, for instance, there are no terms for 'morning' or 'afternoon', only for 'earlier on today' and 'later today'.

The temporal interrogatives 'when' and 'for how long' are in some languages morphologically related to the locational interrogative 'where' and in others to the number interrogative 'how many' (appropriate affixes can then derive forms with literal meanings 'in how many [days/nights]' and 'for how many [days/nights]').

9.5.3 *Particles*

Australian languages typically have a set of a score or so 'particles' that provide logical/modal-type qualification of a complete clause. These are often the only type of word which cannot take any sort of inflection.

Particles almost always include 'not', and usually a separate form 'don't' that is used in negative imperative sentences. Other items often found in this class are 'maybe', 'again', 'still', 'in turn/in retribution' and 'tried but failed'.

9.5.4 *Interjections*

An interjection can be looked on as making up a complete sentence. These forms do not enter into syntactic constructions in the way that all other parts of speech do. The separate status of this word class is shown by the fact that interjections often diverge from the regular phonotactic pattern of the language; they may be the only monosyllables, or the only open monosyllables, for instance.

Besides 'yes' and 'no' there are usually interjections indicating 'I don't know', 'a good job', 'wait a bit' and 'alas'.

9.6 Postinflectional clitics

Most Australian languages have a small set of clitics. These can be added to any type of word and always follow the final inflection; they can fulfil much the same function as particles. Clitics differ from particles in their phonological status; a clitic is not a separate word inasmuch as it cannot bear major stress and must be attached to the end of an inflected word.

We can distinguish two types of clitic. One set will always be added to the first word of a sentence, whatever this is. These items generally qualify the complete sentence; they can indicate that it is certainly true, or possibly true, or that the sentence reports what the speaker was told by someone else, and so on. The second type of clitic can be added to a word at any position in a sentence and will supply further information about the referent of that word. Clitics of this type can often roughly be glossed 'only', 'too', 'still', 'now' etc.; or they can simply have emphatic effect, focussing attention on the word to which they are attached. A particle in one language will frequently correspond to a clitic in another; it is likely that most clitics have developed from what were originally free-standing particles.

Australian languages typically have a rich set of interrogatives for questions that do not require a 'yes/no' answer – 'who', 'what', 'how many', 'where', 'when'; some languages also have distinct interrogative verbs – intransitive 'do what' and transitive 'do what to'. For polar ('yes/no') questions there is sometimes a particle, but often an interrogative clitic. The same form recurs in widely separated languages (this contrasts with other clitics and particles, which usually have quite distinct form in different languages); there is an interrogative clitic *-ba* in Pitta-Pitta, *-mpa* in some Western Desert dialects, *-ma* in Aranda and again *-ma* in Dyirbal. The Dyirbal clitic is attached to the first word of a sentence, whatever this is. The interrogative version of (8) from 9.4.4, for instance, would be:

(9) *bayi+ma yara wundi+nyu bani+nyu*
'Is the man taking a long time to come?'

The four words making up this sentence can occur in any order. Alternative versions of (9), with the same meaning, would be *wundi+nyu+ma bayi yara bani+nyu* or *yara+ma wundi+nyu bayi bani+nyu*, and so on. There are some languages that lack a polar interrogative particle or clitic; here the difference between statements and 'yes/no' questions is indicated entirely by intonation.

A few languages have particles and/or clitics that mark coordinate and subordinate constructions. In Thargari, for instance, *-anma* 'because' and the relative clause marker *-arra* are added after the first word of their clause. However, markers of this type are relatively uncommon in Australia. Subordination is often shown by verbal inflection, and coordination simply by intonation and the deletion of a 'repeated noun phrase' (see 13.5–13.6).

9.7 Types of case marking – 'ergative' and 'accusative'

Each sentence in an Australian language is either transitive or intransitive; we have said that a given verbal stem can occur in only one type of sentence. A transitive sentence has two obligatory NPs, one in subject and one in object function. Since we shall frequently need to refer to these functions it will be useful to employ abbreviations:

A = transitive subject e.g. *the man* in *the man hit* (or *saw*) *the dog*.
O = transitive object e.g. *the dog* in *the man hit* (or *saw*) *the dog*.

An intransitive sentence has just one obligatory NP, in subject function. The abbreviation we use for this is:

S = intransitive subject e.g. *the man* in *the man ran*, *the man fell*.

English distinguishes between nominals in A and O functions entirely by word order – the A NP precedes the verb and the O NP follows it. In Australian languages words can, potentially, occur in any order in a sentence, and the syntactic function of an NP has to be shown by case affixes. There must be different case markings on A and O, the two NPs that occur together in a transitive sentence; either marking can of course be 'zero'. An S NP cannot occur in a sentence with A and O so can economically receive the same case marking as one of them; it would be most straightforward to assign zero inflection to S.

There are thus two basic possibilities. One is:

> O receives one type of case marking, that has non-zero realisation; this is called ACCUSATIVE case.
>
> A and S receive another type of case marking, that may have zero or non-zero realisation; this is called NOMINATIVE case.

This is the familiar pattern of Indo-European languages. It occurs in pronouns in English, where *he* is used in A and S functions and *him* in O function, and so on.

But there is another arrangement, equally possible on a priori grounds:

> A receives one type of case marking, that has non-zero realisation; this is called ERGATIVE case.
>
> O and S receive another type of case marking, that may have zero or non-zero realisation; this is called ABSOLUTIVE case.

Nominals in almost all Australian languages inflect on this pattern. Intransitive subject (S) and transitive object (O) are in absolutive case, which in most languages has zero realisation; transitive subject (A) is in ergative case, which is often *-ŋgu* after a vowel and *-du* after a consonant (the possible forms of the ergative inflection are discussed in more detail in chapter 10).

The Warrgamay sentence given at the beginning of the chapter shows exactly this pattern. Sample intransitive and transitive sentences in

Warrgamay are:

(10) *ŋulmburu gaga+ma*
woman+ABS go+FUT
'The woman will go.'

(11) *maal gaga+ma*
man+ABS go+FUT
'The man will go.'

(12) *ŋulmburu+ŋgu maal ŋunda+lma*
woman+ERG man+ABS see+FUT
'The woman will see the man.'

(13) *maal+du ŋulmburu ŋunda+lma*
man+ERG woman+ABS see+FUT
'The man will see the woman.'

(Note that the words can be arranged in any order for these sentences. We have chosen subject-object-verb for consistent presentation; object-subject-verb is encountered just as frequently. Note also that future inflection is *-ma* with the conjugation that includes *gaga-* 'go' and *-lma* with the conjugation to which *ŋunda-* 'see, look at' belongs.)

Exactly the same case system applies to nominals in Yidiny, as can be seen by inspection of sentences (4)–(6) in 9.4.1; ergative is again *-ŋgu* after a vowel and *-du* after a consonant, while absolutive is zero.

Pronouns, however, usually do not inflect in an absolutive–ergative paradigm. In almost every Australian language first and second person pronouns inflect in a nominative–accusative pattern, just like pronouns, nouns and adjectives in Latin and other Indo-European languages. In Warrgamay, for instance, just the root of a non-singular pronoun is used for S and A functions – we can say that this is the nominative case, with zero realisation; accusative inflection *-nya* is added to the root for O function. Sample sentences with the plural pronouns *ŋana* 'we all (three or more)' and *nyurra* 'you all (three or more)' are:

(14) *ŋana gaga+ma*
we+NOM go+FUT
'We will go.'

(15) *nyurra gaga+ma*
you+NOM go+FUT
'You will go.'

(16) *ŋana* *nyurra+nya* *ŋunda+lma*
we+NOM you+ACC see+FUT
'We will see you.'

(17) *nyurra* *ŋana+nya* *ŋunda+lma*
you+NOM we+ACC see+FUT
'You will see us.'

A sentence can, of course, involve a pronominal subject and a nominal object, or vice versa. It might be thought that the existence of a nominative–accusative case system for pronouns and an absolutive–ergative system for nominals might lead to confusion. This is not so; there is never any chance of ambiguity. Consider:

(18) *ŋulmburu+ŋgu* *ŋana+nya* *ŋunda+lma*
woman+ERG we+ACC see+FUT

Since *ŋulmburu* is in ergative case it must be in A function, and *ŋana* is in accusative case indicating O function – the sentence can only mean 'the woman will see us'. And with:

(19) *ŋana* *ŋulmburu* *ŋunda+lma*
we+NOM woman+ABS see+FUT

ŋana is in nominative case, which could indicate A or S function; *ŋulmburu* is in absolutive case, which could indicate S or O function. But S cannot occur with A or O in the same sentence; and the verb *ŋunda-* is transitive, demanding A and O NPs. *ŋana* must be in A and *ŋulmburu* in O function, with the sentence meaning 'we will see the woman'. (As mentioned at the beginning of the chapter, *ŋulmburu* in (10)–(13) and (18)–(19) could in fact be referring to 'woman' or 'women'; similarly *maal* in (11)–(13) could be 'man' or 'men').

Warrgamay is quite typical of Australian languages. S is marked in the same way as O for nouns and adjectives, and S is marked in the same way as A for non-singular pronouns. But there is a third possibility, that S, A and O are all marked differently. Warrgamay has this pattern for its singular first and second person pronouns. The forms for these three types of case marking are summarised in table 9.1 (the full pronoun paradigm for Warrgamay is in 11.1.1).

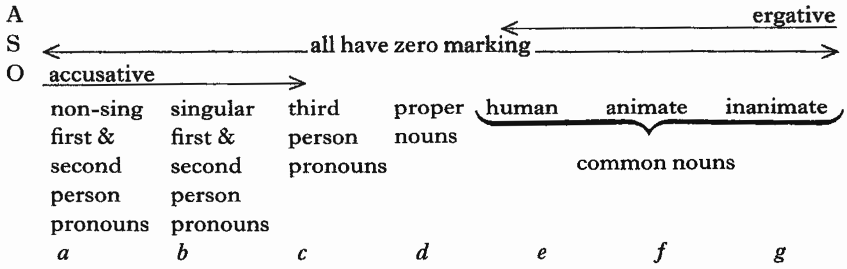
Some languages do have a nominative–accusative system (as in the

Table 9.1

	non-singular pronouns e.g. 'we all'	singular pronouns e.g. 'I'	nouns and adjectives e.g. 'woman'
A	*ŋana*	*ŋaja*	*ŋulmburu-ŋgu*
S		*ŋayba*	*ŋulmburu*
O	*ŋana-nya*	*ŋanya*	

left-hand column) for all pronouns, singular and non-singular, and an absolutive–ergative system (as in the right-hand column) for all nouns and adjectives. But it is quite usual to encounter a few forms with distinct marking for all of S, A and O.

The distribution of these three types of case marking has been explained, by Michael Silverstein, in terms of a semantic hierarchy. This commences with first and second person pronouns, then third person forms, then proper nouns, common nouns with human reference, common nouns with animate reference, and so on. We can show case marking possibilities in terms of the hierarchy:



The general rule is that ergative marking extends in some way from the right of the hierarchy while accusative marking extends in some way from the left. They should at least meet in the middle (otherwise A and O could not be distinguished by case inflections for some word class in the centre of the hierarchy, and another device, such as word order, would have to be employed). When they do just meet we get a simple split nominative–accusative/absolutive–ergative system. But ergative and accusative markings can overlap in the middle, and in the area of overlap there are different forms for all of S, A and O.

All 'split case systems' in Australian languages – and in languages from other parts of the world, too – by and large conform to this diagram. In Warrgamay accusative covers *a*, *b* and dual and plural third person pronouns under *c*, while ergative is shown by *b–g*. (In 11.1 we show that the A form of the first person singular pronoun, *ŋaja*, has developed from an original **ŋay*+*ju*, involving the addition of ergative *-ju* to the pA monosyllabic root **ŋay*; similarly accusative *ŋanya* comes from **ŋay* plus accusative *-nya*.)

In Yidiny, accusative covers *a–c* and ergative *c–g*. In this language all first and second person pronouns show a nominative–accusative pattern, all nominals an absolutive–ergative paradigm, while third person pronouns that have human reference show different forms for all three core syntactic functions. In Dyirbal – spoken in the region between Warrgamay and Yidiny – accusative covers *a*, *b* and *d*, and ergative *c–g*; all first and second person pronouns are nominative–accusative, common nouns and the 'determiners' that function a little like third person pronouns are absolutive–ergative, while just proper nouns have three distinct case forms. For Dyirbal, determiners appear to lie to the right of proper nouns on the hierarchy (but this is not a strict 'exception' to the hierarchy since these determiners only show limited similarity to third person pronouns in other languages).

There appears to be a semantic reason why case marking splits are motivated by the hierarchy. Referents of items to the left in the hierarchy are natural instigators of actions, whereas, as one moves to the right, each new class is progressively less likely to occur as transitive subject. People – preeminently the speaker and addressee – are more likely to function as subject than as object for an event referred to by a transitive verb; inanimate things, at the other end of the hierarchy, will be object more often than subject. It is thus reasonable morphologically to mark the rightmost classes (with the ergative inflection) when they occur in the semantically marked function A, but it is less necessary to mark the leftmost classes when they occur in their most natural function, transitive subject. The reverse argument applies for accusative: direct object is an unusual or 'marked' function for the leftmost classes, so accusative marking is more natural at this end of the hierarchy. An overt case – ergative or accusative – is used to mark a form occurring in a function which is semantically marked, with respect to the nature of the referent of that form.

This line of argument does not of course explain why singular pronouns sometimes have separate forms for S, A and O functions whereas non-singular pronouns follow a normal nominative–accusative paradigm. But it is a characteristic of all languages that if there are differences in case inflection for singular and non-singular numbers, then the richer system will apply in the singular (this is the 'unmarked' term in any number system). This universal trait accounts for splits between *a* and *b* on the hierarchy.

10

Nouns

A noun in an Australian language will consist of a lexical root or stem and a final case inflection, indicating its function in a sentence. Between root and inflection there can (but need not) appear one or more derivational affixes, indicating things like dual number, intensification ('really', 'very'), and so on. A few northerly languages also show prefixes to nouns, indicating gender class and/or a pronominal element indicating 'possessor'.

In this chapter we discuss the systems of case inflection of some modern languages, from the non-prefixing area, and then draw inferences concerning the number, function and form of cases in proto-Australian. A final section discusses nominal derivational affixes. (As we have already mentioned, adjectives normally have the same morphological possibilities as nouns. The case systems we discuss apply to both nouns and adjectives.)

We employ traditional case labels whenever these seem appropriate – 'dative', 'locative', 'ablative' and so on. But too much should not be read into the actual labels used. Cases labelled by the same name in different languages will have a common semantic core, but may differ greatly in their extensions from this. We use 'ablative' for what happens in Australian languages to be a purely local case, indicating motion 'from' some place or thing; in Latin the ablative case covers this function but also includes instrumental and comitative senses ('by means of' and 'with') amongst others. Cases that we label 'dative' in different Australian languages will have a common semantic core but also important differences. In both Warlpiri and Warrgamay dative is used to mark the indirect object 'the child' in 'the man is speaking to the child'; but for 'the child' in 'the man gave food to the child' Warlpiri again uses dative while Warrgamay prefers genitive.

One special characteristic of Australian languages is the inclusion of a special case function 'for fear of', for which we use the label 'aversive'. This can be used in sentences like 'don't go outside for fear of the storm!' and 'I ran away for fear of the policeman'; it is also typically used on the nominal complement of an intransitive verb 'be afraid of' – 'I'm afraid of that dog'.

Almost all Australian languages have two distinct ways of indicating possession. A genitive suffix can be added to the possessor noun (and also to any adjective modifying it) to indicate 'alienable possession' – something that is not an intrinsic part of the possessor – or a kinship relation. Thus in Warrgamay we can say:

(1) *ŋaja* *ŋulmburu+ŋu* *mindi* *ŋunda+lma*
I+NOM woman+GEN+ABS bag+ABS look at+FUT
'I'll look at the woman's grass dilly-bag.'

(2) *ŋulmburu+ŋu* *wurrbi+ŋu* *wirru*
woman+GEN+ABS big+GEN+ABS husband+ABS
nyagarram *gaga+ma*
small+ABS go+FUT
'The large woman's small husband will go.'

Whatever inflection is appropriate to the head ('possessed') noun of an NP will also be added to a possessor noun (and to any modifying adjective) AFTER the genitive suffix. (In (1) and (2) this case was absolutive, with zero realisation, since the 'possessed' NP is in transitive object (O) and intransitive subject (S) functions, respectively; (18) below shows genitive followed by ergative inflection.)

Inalienable possession – something being an inseparable part of something else – is shown by just apposing possessor and possessed nouns, without any special suffix such as genitive. Thus in Warrgamay:

(3) *ŋaja* *ŋulmburu* *bingany* *ŋunda+lma*
I+NOM woman+ABS foot+ABS look at+FUT
'I'll look at the woman's foot.'

10.1 Case functions

Australian languages commonly have about five or six distinct case inflections. However, in order to compare systems in different languages it is useful to recognise a dozen different functions of NPs. No language has a separate case for all twelve functions; in a certain language one case may cover functions *a*, *b* and *c*, another case *d* and *e*, and so on. But different languages do divide up these twelve functions in different ways – some other language may have one case for *a* and *b*, another for *c* and *d*, a third case for *e*, and so on. The twelve functions will provide a framework for comparison of individual case systems and for reconstruction of pA cases.

In this section we list and exemplify the twelve sytactic functions. Yidiny, from the north-east Queensland coast, is chosen as the language of exemplification, partly because it has eight separate inflections, about as many as are found in any Australian language. The case systems of four other modern languages are discussed in 10.2.

It is useful to divide the case functions into CORE and PERIPHERAL. Those NPs that MUST be included in a sentence if it is to have a complete sense are said to be in core function – these are intransitive subject, transitive subject and transitive object (referred to as S, A and O respectively). The remaining, peripheral, functions can again be subdivided, into LOCAL – simply implying motion to or from or rest at some place or thing – and SYNTACTIC PERIPHERAL – marking indirect object, goal of activity, 'what is feared', and so on.

CORE FUNCTIONS

[i] S and [ii] O are marked by ABSOLUTIVE case, with zero realisation, in Yidiny as in most Australian languages:

(4) *yiŋu* *waguuja* *gali+ŋ*
this+ABS man+ABS go+PRES
'This man is going.'

(5) *mujaam+bu* *waguuja* *wawa+l*
mother+ERG man+ABS look at+PRES
'Mother is looking at the man.'

[iii] A is marked by ERGATIVE case. This usually has a number of distinct forms (or allomorphs) depending on the final segment of the stem to which it is attached. The allomorphs in Yidiny are:

-ŋgu after a vowel (see example (5) in 9.4);
-du after a consonant.

The *-d-* assimilates in place of articulation to a stem-final nasal or *y*; thus ergative is *-bu* after *m* as in *mujaam+bu* in (5) above, *-du* after *n*, and *-ju* after *ny* or *y*. It remains *-du* after *l*, *rr* or *r*, as in

(6) *wagaal+du mujam wawa+l*
wife+ERG mother+ABS look at+PRES
'[My] wife is looking at mother.'

(The alternation between long and short vowels in such forms as *mujam*, and its ergative form *mujaam+bu*, in (5), is phonologically predictable; it is irrelevant to the discussion of this chapter and should be ignored.)

There is just one noun in Yidiny with an irregular ergative; the very common form *bama* 'person' has underlying ergative inflection *-lu*.

A transitive subject, marked by ergative case, refers most frequently to humans or another animate beings; it is possible, though, to get an inanimate A, as in 'the sun burnt my skin', 'the floodwater swallowed up the camp', and so on.

LOCAL PERIPHERAL FUNCTIONS

Peripheral NPs are not strictly necessary to the grammaticality of a sentence; syntactic peripheral NPs provide additional information about the cause or purpose of the event, and local peripheral NPs about its setting. There are three basic local functions:

LOCATIVE	'in, at, on'
ALLATIVE	'to, towards'
ABLATIVE	'from'

These are solely concerned with the location of the event or situation that is being described. Verbs of motion ('go', 'run', 'carry' etc.) can take complements with allative and/or ablative specification; verbs of rest ('sit', 'put', 'leave') may take complements with locative specification. But in fact locative information can be provided for any sentence – we can say that someone laughed/dreamt/died/hit/carried something AT a place. Locative is thus the most unmarked of the three local functions; of the other two functions allative is relatively unmarked, with ablative being most marked of all.

These degrees of markedness, which seem to be universal, can readily be seen in the occurrence of prepositions with *where* in English. Consider the following questions and answers:

Where do you live?	*I live at the coast.*
Where are you travelling (to)?	*I'm travelling to the coast.*
Where are you travelling from?	*I'm travelling from the coast.*

In the three statements from the right-hand column the local preposition 'governs' the NP *the coast* and cannot be deleted. The questions on the left are effectively formed by substituting *where* for *the coast* and moving this element to the front of the sentence. The preposition now remains at the end of the sentence, without a following NP, and is 'at risk' to be deleted. But note that a local preposition *at/in/on* MUST be deleted, the allative preposition *to* can be either deleted or retained, while ablative *from* CANNOT be deleted. There can be no confusion between *where do you live?* and *where are you travelling?* since the semantic character of the verb – a verb of rest in the first sentence and a verb of motion in the second – clearly indicates that *where* has a locative sense in one instance and an allative sense in the other. But *from* cannot be deleted, or else *where are you travelling?* would be irretrievably ambiguous.

Most Australian languages have distinct case inflections for all three local functions. But if two of them do fall together, we would predict that it could only be locative and allative; this is what is found in Yidiny (as in many languages from other parts of the world).

[iv] LOCATIVE and [v] ALLATIVE have, like ergative, a number of allomorphs which depend on the identity of the last segment of the stem:

-la after a vowel;
-da after a consonant.

The *-d-* assimilates in place of articulation to a stem-final nasal or *y*, exactly as for ergative. The semantic nature of the verb indicates whether the inflection has locative or allative sense, in any instance of use:

(7) *mujam wuna+ŋ digarra+la*
mother+ABS lie+PRES beach+LOC
'Mother lives at the beach.'

(8) *mujam galiŋ digarra+la*
mother+ABS go+PRES beach+ALL
'Mother is going to the beach.'

Interestingly, the interrogative 'where' has distinct locative and allative forms – *wanyja* 'where at' and *wanyjaal* 'where to'. This suggests that we should recognise locative and allative to be two distinct cases for Yidiny, noting that they have identical realisations on nominals. (Yidiny is in a sense the opposite of English, where locative/allative are distinguished in prepositional phrases, but not always with pronouns – interrogative *where* and deictic *there*, *here*.)

There is evidence that an earlier stage of Yidiny had *-ŋga* as another allomorph of locative–allative (it occurred on roots of two syllables ending in a vowel and has now reduced simply to *-V* i.e. lengthening of the stem-final vowel). This establishes a further congruence with ergative:

ERGATIVE *-du* after a consonant, *-ŋgu* or *-lu* after a vowel;
LOCATIVE *-da* after a consonant, *-la* or *-ŋga* after a vowel.

Locative shows the same possibilities as ergative, save that the final vowel is *a* rather than *u*. Almost every Australian language has this correspondence, and in fact the allomorphs usually pair up exactly; Yidiny is unusual in that *-ŋgu* is the basic ergative form after a vowel, with *-lu* occurring on only one noun, whereas *-la* is the productive locative in the modern language.

[vi] ABLATIVE is in Yidiny *-mu* ~ *-m* e.g.

(9)	*mujam*	*gali+ŋ*	*digarra+mu*
	mother+ABS	go+PRES	beach+ABL

'Mother is going from the beach.'

SYNTACTIC PERIPHERAL FUNCTIONS

In addition to local peripheral NPs, which specify the locational setting of an event or situation, a sentence can also include NPs which refer to some further participant that is in some way connected with the event or situation. There are three main 'syntactic peripheral' case functions; their forms are, in Yidiny:

[vii] DATIVE *-nda*; [viii] PURPOSIVE *-gu*; and [ix] CAUSAL *-mu* ~ *-m*.

Like local NPs, syntactic peripheral NPs can be added freely to any type of core, whether transitive or intransitive. Dative could be said to mark an 'indirect object', as in:

(10)	*waguja+ŋgu*	*minya*	*buji+ŋ*	*wagaal+nda*
	man+ERG	meat+ABS	tell+PRES	wife+DAT

'The man is telling about meat to his wife (i.e. The man is telling his wife about some meat).'

Or it can indicate the passive orientation of some activity:

(11) *yiŋu* *gurŋa* *maŋga+ŋ* *waguja+nda*
THIS+ABS kookaburra+ABS laugh+PRES man+DAT
'This kookaburra (bird) is laughing at the man.'

Purposive marks an NP whose referent is the goal of the activity:

(12) *yiŋu* *waguuja* *gali+ŋ* *minyaa+gu*
THIS+ABS man+ABS go+PRES meat+PURP
'This man is going out for meat (i.e. to spear animals).'

Dative marks a 'passive' participant, which need not play any further role in the chain of events described by succeeding sentences. But purposive marks a participant which activity is directed towards, in order to draw it into the chain of events. Thus (12) would be likely to be continued by a verb *bagaajina* 'to spear [the animals]', for which *minya* 'animal, meat' would be a core constituent, the underlying object NP; there is no expectation of any further clauses following on from (10) or (11).

A causal NP will indicate the reason for the state or event described by the core constituents, for example:

(13) *mujam* *dubuurrji* *wuna+ŋ* *minya+m*
mother+ABS full up+ABS lie+PRES meat+CAUS
'Mother is lying down satiated from meat.'

As with purposive, a subordinate clause could be added to (13) specifying that mother had 'been eating [meat]'.

There is a semantic correspondence between the three local cases and the three syntactic peripheral cases we have described:

	LOCAL PERIPHERAL		SYNTACTIC PERIPHERAL	
unmarked	LOCATIVE	— — — —	DATIVE	unmarked
motion to/towards	ALLATIVE	— — — —	PURPOSIVE	activity for/directed towards
motion from	ABLATIVE	— — — —	CAUSAL	activity resulting from

Allative and purposive indicate different types of goal – the place to which motion is directed, and the person or thing towards which the activity is directed (so that something can be done to it). Ablative and causal are, in a sense, their opposites; they indicate the locational origin, and the originator of a present state or activity, respectively. The connection between locative and dative is, in semantic terms, less strong; they are the unmarked members of their respective systems, each lacking any implications of 'for' or 'from'. There is in fact a strong syntactic connection between locative and dative in Yidiny – they can be substituted one for the other, in certain constructions.

Ablative and causal cases have exactly the same realisation – *mu* after a trisyllabic stem ending in a vowel, and *-m* with all other stems. The main justification for recognising two distinct cases is that the interrogatives are quite distinct. The ablative interrogative 'whence, from where' is *wanyjam*; thus a reply to *mujam galiŋ wanyjam* 'where is mother going from?' could be (9). The causal interrogative 'as a result of what?' is *wanyiinmu*; thus a reply to *mujam wunaŋ wanyiinmu* 'why is mother lying down?' could be (13).

There are two other peripheral syntactic cases, which do not have any corresponding local cases: instrumental, and aversive.

[x] INSTRUMENTAL marks the weapon or tool used in an activity:

(14) *waguja+ŋgu wagal bunja+ŋ baŋgaal+da*
man+ERG wife+ABS hit+PRES axe+INST
'The man hit [his] wife with [the back of] an axe.'

Instrumental has exactly the same form as locative–allative: *-da* after a consonant and basically *-la* after a vowel. Instrumental can be recognised as a distinct case on semantic, syntactic and morphological grounds – there is a transformation which can place an instrumental (but never a locative or allative) NP into absolutive case (cf. 13.3); and there are distinct locative and instrumental forms of deictic and interrogative pronouns.

[xi] AVERSIVE is shown by *-jida* after a consonant and *-yida* after a vowel. It marks a peripheral NP whose referent is feared and should be avoided, and the verb of the sentence will normally be describing or suggesting action that can be taken to bring this about e.g.

(15) *yiŋu waguuja garba+ŋ bama+yida*
THIS+ABS man+ABS hide+PRES people+AVERS
'This man is hiding for fear of the [strange] people (i.e. so that he will not be seen by them).'

An NP in aversive case can also be included with an intransitive verb 'to be frightened':

(16) *mujam* *yarŋga+ŋ* *gudaga+yiida*
mother+ABS frightened+PRES dog+AVERS
'Mother is frightened of the dog.'

Finally, there is the suffix that marks a 'possessor' of something alienably owned:

[xii] GENITIVE *-ni*, as in:

(17) *mujam+bu* *wagaal+ni* *gudaaga* *wawa+l*
mother+ERG wife+GEN+ABS dog+ABS look at+PRES
'Mother is looking at [my] wife's dog.'

A noun in genitive form functions like an adjective, modifying the head ('possessed') noun and agreeing with it in case inflection. Thus if *gudaga* 'dog' in *wagal+ni gudaga* 'wife's dog' is in A function, ergative inflection will be added to *gudaga* and also to *wagal+ni*:

(18) *wagal+ni+ŋgu* *gudaga+ŋgu* *mujam* *baja+l*
wife+GEN+ERG dog+ERG mother+ABS bite+PRES
'[My] wife's dog is biting mother.'

None of [i]–[xi] can be followed by a case inflection, as genitive can. In view of this an argument can be put forward for genitive to be considered not an inflection but rather a derivational affix (like 'with', 'without' and the other nominal derivational affixes mentioned in 10.4), serving to derive a nominal stem that then takes an inflectional ending appropriate to its function in the sentence. Whether genitive is properly an inflectional or a derivational affix in Australian languages is something of a controversial question, which it would not pay us to enter into more deeply here.

Yidiny, then, has eight distinct inflections corresponding to these twelve case functions; one of them is absolutive, with zero realisation, covering S and O functions. Locative, allative and instrumental have identical realisations, and so do ablative and causal; but the inflections of deictics or interrogatives, and syntactic possibilities (discussed in 13.3), serve to distinguish between these cases.

The only disyllabic case inflection is aversive *-jida*~*-yida*. It can be shown that historically this involved the addition of locative *-da* to the comitative derivational affix *-*jir* ~ -*yir* (see 10.4). Today, comitative has reduced to -*ji* ~ -*yi* and the originally bimorphemic aversive *-*jir*+*da* ~ -*yir*+*da* has now become a distinct, unanalysable case inflection -*jida* ~ -*yida*.

10.2 Some typical case systems

We can now look at the case systems of four further languages. These are summarised, along with the Yidiny inflections, in table 10.1.

[1] DYIRBAL, although spoken immediately to the south of Yidiny, is as different from it grammatically as is almost any non-prefixing language. Dyirbal and Yidiny plainly belong to quite different branches of the Australian family and have come into contiguity rather recently. There are some similarities between their case systems, and also important differences.

Dyirbal has -*gu* for purposive, exactly like Yidiny, but uses it also for dative and allative functions. Locative inflection also covers the aversive function. There are grammatical reasons for distinguishing dative–purposive and allative as separate cases. But there is no criterion by which dative–purposive could be recognised as anything but a single syntactic peripheral case; similar remarks apply to locative–aversive.

There is one gap in the Dyirbal system – there is no way of showing causal function of an NP. Cause is normally shown in Dyirbal by a verb, rather than a noun – thus a sentence like (13) would be rendered in Dyirbal by 'mother is lying down satiated after eating [meat]', involving a perfective relative clause with the verb *jaŋga-y* 'to eat'.

Absolutive case, with zero realisation, is used for S function with all types of nouns and adjectives, and also for O function with all adjectives and most nouns. There is an accusative suffix -*nya* that occurs on pronouns in Dyirbal (as in Yidiny) but is in Dyirbal extended to mark O function with proper names, and occasionally with some common nouns that have human reference (most frequently with *yabu* 'mother' and *ŋuma* 'father') – cf. 9.7.

Ergative in Dyirbal is -*du* after a consonant (with assimilation in place of articulation to a stem-final nasal or *y*) and -*ŋgu* after a vowel, identical to ergative in Yidiny (there is no trace in Dyirbal of the allomorph -*lu* that occurs on just one word in Yidiny). Locative is exactly the same as ergative, except that the final vowel is *a* rather than *u*. This is a common

Table 10.1. *Case systems of five typical non-prefixing languages*

		Yidiny	Dyirbal	Kalkatungu	Warlpiri	Western Desert	
						COMMON	PROPER
i	S	ϕ	ϕ	ϕ	ϕ	ϕ	*-nga* ~ *-nya*
ii	O		ϕ ~ *-nya*				
iii	A	*-du*† ~ *-ŋgu*(~ *-lu*)	*-du*† ~ *-ŋgu*	*-du*† ~ *-ŋgu* ~ *-dhu*	*-ngku* ~ *-rlu*	*-tu*† ~ *-ngku*	*-tu*† ~ *-lu*
iv	LOCATIVE	*-da*† ~ *-la*(- ~ *ŋga*)	*-da*† ~ *-ŋga*	a. *-dhi* ~ *-biya* b. *-ŋii*	*-ngka* ~ *-rla*	*-ta*† ~ *-ngka*	*-ta*† ~ *-la*
v	ALLATIVE		⟨=vii/viii⟩	a. ⟨vii/viii⟩ + *nha* b. ⟨ivb⟩ + *nha*	*-kurra*	⟨viii⟩ + *tu*	⟨iv⟩ + ⟨viii⟩ + *tu*
vi	ABLATIVE	*-mu* ~ *-m*	*-ŋunu*	⟨iva⟩ + *ŋu*	*-ngurlu*	*-nguru*	⟨iv⟩ + *nguru*
vii	DATIVE	*-nda*	*-gu*	*-gu* ~ *-V*(*ya*)	*-ku*	⟨=iv⟩	
viii	PURPOSIVE	*-gu*				*-ku*	
ix	CAUSAL	⟨=vi⟩	—	⟨iii⟩ + *ŋu*	*-jangka*	*-tjanu*	
x	INSTRUMENTAL	⟨=iv/v⟩	⟨=iii⟩	⟨=iii⟩	⟨=iii⟩	⟨=iv⟩	
xi	AVERSIVE	*-jida* ~ *-yida*	⟨=iv⟩	⟨=ix⟩	*-kujaku*	⟨iv⟩ + *tawarra*	
xii	GENITIVE	*-ni*	*-ŋu* & *-mi*	⟨=vii/viii⟩	*-kurlangu*	⟨=viii⟩	

† Assimilates in place of articulation to a preceding nasal, lateral or *y*.

pattern that is found in very many Australian languages – ergative has a number of different forms, all ending in *-u*, depending on the final segment of the stem to which it is attached, and locative shows exactly the same distribution, detail-for-detail, except that the final vowel is *a*. Dyirbal precisely follows this recurrent pattern; Yidiny is unusual in that after vowels the commonest ergative inflection is *-ŋgu* whereas locative is *-la* (although there is also evidence of *-lu* and *-ŋga*).

Whereas in Yidiny instrumental coincides with locative, in Dyirbal it has the same form as ergative. Both ergative and instrumental NPs can occur in a single Dyirbal sentence, as:

(19) *bala* *yugu* *baŋgul* *yara+ŋgu* *gunba+n*
IT+ABS tree+ABS HE+ERG man+ERG cut+PRES
baŋgu *bari+ŋgu*
IT+INST axe+INST
'The man is cutting the tree with an axe.'

(Each NP in core or peripheral syntactic function in Dyirbal usually contains a determiner. The first element is *bala-* 'there', *yala-* 'here' or *ŋala-* 'not visible'; the *-la-* from these forms is frequently lost before a non-zero inflection. The second element is ergative–instrumental *-ŋgu-*, dative–purposive *-gu-*, absolutive *-ϕ-* (or genitive *-ŋu-*). Finally, there is a class indicator – masculine *-l*, feminine *-n*, edible *-m* or neuter *ϕ*; the fact that class markers FOLLOW case inflections is one piece of evidence suggesting that the noun class system in Dyirbal did develop quite recently – see 9.2.1. There is one irregularity – absolutive masculine 'there' form is *bayi* where *balal* would be expected.)

Although ergative and instrumental have identical marking they must be considered distinct cases in Dyirbal since they behave differently under various syntactic operations. A reflexive sentence, for instance, is a derived intransitive, with a single NP in absolutive case (derived S function) corresponding to underlying A and O functions; the verb is marked by reflexive derivational affix *-yirri-y*. Thus:

(20) *bayi* *yara* *gunba+yirri+nyu* *baŋgu* *barri+ŋgu*
HE+ABS man+ABS cut+REFL+PRES IT+INST axe+INST
'The man is cutting himself with an axe.'

The important point to note here is that although the reflexive derivation effectively removes 'the man' from ergative inflection and places it in absolutive case, it leaves the instrumental NP quite untouched, showing that instrumental and ergative are distinct cases. Further syntactic derivations, which affect ergative and instrumental NPs in quite different ways, are discussed in 13.3.

Almost without exception, Australian languages have instrumental case coinciding in form either with ergative or with locative. More than three-quarters of the languages have ergative identical to instrumental, like Dyirbal; but the two types of NP generally behave differently under syntactic operations so that we can recognise two cases, with identical realisation. The remaining languages have instrumental coinciding with locative, as in Yidiny; similar remarks apply.

Dyirbal has two genitive suffixes: the most frequent form is *-ŋu*, indicating present possession; suffix *-mi* signifies that an object used to belong to some person, or that he owns it but does not have it in his possession at the present time. These two nominal suffixes are in fact identical to the two verbal inflections which signal different types of relative clause – see 13.5.

Dyirbal thus has seven distinct inflections covering eleven of the case functions (there is no way of showing 'causal'), one of them being absolutive with zero realisation. In addition, the pronominal accusative *-nya* extends to proper nouns and, optionally, to a few common nouns with human reference.

[2] KALKATUNGU is spoken near the Northern Territory border of Queensland, some 500 miles to the south-west of Yidiny and Dyirbal. The fourth column of table 10.1 gives the forms of case inflections that apply to almost all nouns and adjectives in Kalkatungu. Slightly different inflections apply to kinship nouns such as 'mother', 'uncle', and there are also a few irregular items; we here pass over these minor classes.

Kalkatungu has a rich set of local inflections with two locatives and two allatives. Locative type-a has the form *-dhi* on a trisyllabic stem ending in a vowel and *-biya* on all other stems; it can be translated 'at', 'in' or 'on' and would be used on 'coolibah' in 'the crow is in the coolibah tree', for instance. Locative-b is *-ŋii* onto all types of stem and can be translated 'facing' or 'onto'; 'back' bears this inflection in 'I fell on my back'.

A single inflection appears to span dative, purposive and genitive functions. This has the form *-gu* following a consonant but *-V(ya)* after a vowel (where *V* lengthens the final vowel of the stem) – note the similarity with purposive *-gu* in Yidiny and purposive–dative–allative *-gu* in Dyirbal. Many Australian languages are like Kalkatungu in having genitive identical with dative and/or purposive *-gu*; in some other languages genitive involves an increment to the recurring dative–purposive *-gu*.

The two allatives in Kalkatungu involve the addition of *-nha* to other case forms. Allative-a can be glossed 'to' e.g. 'I went to town'; it involves *-nha* added to dative–purposive–genitive, that is *-gunha* after consonants and *-V(ya)nha* after vowels. Allative-b involves *-nha* added to locative-b *-ŋii* i.e. *-ŋiiha* on all types of stem. It means 'towards' (e.g. 'I went towards the town'), showing a clear semantic and formal relation with locative-b 'facing, onto'.

Ergative shows a pattern reminiscent of Dyirbal and Yidiny. It is *-du* after a consonant – with assimilation of *d* to the place of articulation of the stem-final consonant – and *-ŋgu* after a disyllabic but *-dhu* after a longer stem ending in a vowel (only the third allomorph *-dhu* is not found in Yidiny or Dyirbal). Postvocalic allomorph *-ŋgu* reduces to *-gu* after a stem which shows a nasal-plus-stop cluster; this is an example of nasal dissimilation, which recurs in many Australian languages – see 7.5.

Instrumental coincides with ergative, exactly as in Dyirbal. One point of note is that Kalkatungu appears to lack a locative inflection which follows the common pattern of having allomorphs like those of ergative save that the final vowel is *a* rather than *u*. There are, however, a number of nominals that inflect irregularly: three members of this set, all monosyllabics, do take *-ŋga* as the locative-a inflection e.g. *guu+ŋga* 'water+LOC-a'. In addition, Barry Blake has pointed out that in Yalarnnga, a close genetic relative of Kalkatungu, locative-a is *-ŋga* on disyllabic stems (all stems in Yalarnnga end in a vowel), suggesting a locative-a form *-ŋga* in proto-Yalarnnga–Kalkatungu, paralleling ergative *-ŋgu*.

We saw that causal and ablative coincide formally for Yidiny. In Kalkatungu causal involves the addition of *-ŋu* to the ergative suffix (thus we have *-duŋu* ~ *-ŋguŋu* ~ *-dhuŋu*) while ablative involves the addition of *-ŋu* to the common unmarked locative, locative-a (ablative is *-dhiŋu* ~ *-biyaŋu*). Aversive is covered by the same inflection as causal in Kalkatungu. Thus:

(21)	*ŋayi*	*milhdhi*	*wagin+ϕ*	*bijiri+dhuŋu*
	I+NOM	eyes+ABS	spin+PRES	pituri+CAUS

'I am drunk from pituri (i.e. from chewing pituri, a native tobacco-like narcotic).'

(22) *yanyi+ŋguŋu birlabirla rumbi+ϕ*
ghost+AVERS child+ABS fear+PRES
'The child is frightened of ghosts.'

It will be seen that Kalkatungu has only five basic inflections for the twelve case functions, one being absolutive, with zero realisation. There are in addition two increments: *-nha* is added to dative–purposive–genitive and also to locative-b, to form allative-a and allative-b respectively; and *-ŋu* is added to ergative and to locative-a, to form causal–aversive and ablative respectively.

[3] WARLPIRI is a flourishing language spoken in the Northern Territory, just about 500 miles due west of Kalkatungu. All roots end in a vowel – we mentioned in 7.2.1 the historical process by which *-pa* was added to all erstwhile consonant-final roots.

The absolutive case, with zero inflection, is used for S and O functions with all types of noun, as in Yidiny and Kalkatungu. Instrumental falls together with ergative, like Dyirbal and Kalkatungu. Ergative is *-ngku* after a disyllabic nominal and *-rlu* after a stem of three or more syllables. Locative exactly parallels ergative except for the final vowel; it is *-ngka* after two and *-rla* after three or more syllables. Postvocalic allomorphs *-ngku* and *-ngka* occur in all the other languages we have looked at. It can be shown that *-rlu*/*-rla* are recent developments – specific to Warlpiri – from original forms *-lu* and *-la*. These forms correspond to ergative *-lu* and locative *-la* in Yidiny and in many other languages (in Pitta-Pitta, for instance, ergative is invariably *-lu*; in this language all stems end in a vowel – see 10.3).

Dative–purposive is again *-ku*. In Dyirbal *-gu* also extends to allative and in Kalkatungu it covers genitive. In Warlpiri allative and genitive appear to involve increments to the dative/purposive inflection – they are *-kurra* and *-kurlangu* respectively.

Ablative in Warlpiri is *-ngurlu*; note the similarity to Dyirbal *-ŋunu* and to the ablative increment *-ŋu* onto locative-a in Kalkatungu. There is a quite separate inflection *-jangka* that covers both causal function ('I am getting tired from work') and also origin or source ('they get wax from spinifex').

Warlpiri has bound pronominal suffixes which must obligatorily be included in a sentence (cf. 11.3). One bound suffix refers to the subject (S or A) NP and the other to either an O NP or to an indirect object, marked by dative–purposive *-ku*. Although ergative and instrumental have identical realisation only an ergative NP can be cross-referenced. Similarly, allative and genitive suffixes appear to be based on *-ku*, but neither type of NP can be cross-referenced by a bound pronominal suffix.

There is also an aversive nominal suffix *-kujaku* which is used in sentences like 'get into the house for fear of the cold air', 'let's go to the high ground for fear of the flood', and 'let's go around the place for fear of a fight' (*-kujaku* is also used to mark the verb in an admonitive clause e.g. 'hold the child, LEST HE FALL!'). A verb of fearing can have its complement marked by aversive *-kujaku* or – perhaps a little more frequently – by dative–purposive *-ku*:

(23) *kurdu* *ka+ϕ* *lani+jarri+mi*
child+ABS PRES+3sg-SUBJECT fear+INTR-VBLSR+PRES
kamurlu+kujaku
camel+AVERS
'The child is afraid of the camel.'

(24) *kurdu* *ka+ϕ+rla*
child+ABS PRES+3sg-SUBJECT+3sg-DAT
lani+jarri+mi *kamurlu+ku*
fear+INTR-VBLSR+PRES camel+DAT
'The child is afraid of the camel.'

The important point of difference between these two sentences is that the dative NP, in (24), is cross-referenced by *-rla* in the verbal auxiliary, whereas the NP in aversive case, in (23), is not normally cross-referenced in this way. This indicates that *-kujaku* cannot be regarded as consisting of *-jaku*, added to the dative–purposive inflection *-ku*; *-ku* and *-kujaku* are in present-day Warlpiri quite distinct inflections.

Warlpiri has nine basic inflections (including absolutive, with zero realisation) but it is likely that three of them – allative, genitive and aversive – are, historically, based on dative–purposive *-ku*.

[4] The WESTERN DESERT language (sometimes known as Pitjantjatjara, properly the name of just one dialect) is spoken to the south-west of Warlpiri over thousands of square miles of Western Australia, also

covering parts of South Australia and the Northern Territory. Its many speakers show a considerable dialectal spread. The case system summarised in the last columns of table 10.1 is basically that of the Nyangatjatjara dialect from around Ooldea.

There are slightly different inflections for common and for proper nouns for most case functions; these are shown in two separate columns in the table. With common nouns, absolutive – covering S and O functions – has zero realisation; the dummy syllable *-pa* is added to any word that ends in a consonant (see 7.2.1) but this is a general phonological rule of the language and *-pa* is not to be identified as a case inflection. With proper nouns, however, absolutive is *-nga* following a consonant and *-nya* after a vowel. We have mentioned that *-nya* occurs as accusative affix on pronouns in most Australian languages (including Western Desert and Dyirbal). In Dyirbal *-nya* also marks O function with proper (and a few common) nouns; in Western Desert it appears that *-nya* has been generalised to mark S as well as O function with proper nouns. (The origin of postconsonantal allomorph *-nga* is not known; it COULD be a development from *-nya*, but there is no definite evidence supporting this.)

Ergative shows the familiar allomorphs *-tu*, *-ngku* and *-lu*. The form *-tu* appears after consonants with both common and proper nouns and assimilates in place of articulation to a stem-final nasal or lateral; in this, Western Desert is identical to the other languages we have described (note that Warlpiri does not have any consonant-final stems). The forms of ergative after a vowel are *-ngku* and *-lu*, parallel to *-ngku* and *-rlu* in Warlpiri. But the conditioning factor is rather different:

	-ngku occurs	*-lu*/*-rlu* occurs
IN WARLPIRI	on disyllabic stems	on trisyllabic and longer stems
IN WESTERN DESERT	on common nouns and adjectives	on proper nouns

The factor that determines which allomorph is to be used is phonological in Warlpiri but syntactic–semantic in Western Desert.

Locative is identical to ergative, save that the final vowel is *a* and not *u*. It is *-ta* (with assimilation) after a consonant, *-ngka* onto a common noun or adjective ending in a vowel and *-la* after a vowel-final proper noun. This inflection does have a wide functional range in Western Desert, covering normal locative function ('in the thicket') and also dative function ('show it to the man', 'talk to the child'). Locative also falls together with instrumental, as in Yidiny (but quite unlike Dyirbal, Kalkatungu and Warlpiri where instrumental coincides with ergative).

The third important inflection is *-ku*, being used for purposive and also genitive functions, as in Kalkatungu. This has a constant form with all common and proper nouns, and adjectives, whatever their final segment. Locative suffix plus an increment *-tawarra* (~ *-rtarra* in other Western Desert dialects) marks aversive function e.g. 'I made a shelter for fear of the rain'; but a verb of fearing appears to take *-ku* on its complement ('afraid of the horse').

Allative is *-ku+tu* (although this can be shortened to just *-ku* or just *-tu*), and appears to be based on purposive/genitive, as in Kalkatungu and Warlpiri. (Note that this *-tu* is quite distinct from the ergative allomorph *-tu*; the latter occurs only after consonants.) Ablative is a distinct inflection *-nguru* (it is *-ngurni* in the Gugada dialect of Western Desert). For proper nouns, allative *-kutu* and ablative *-nguru* must be added after the locative inflection.

It will be seen that Western Desert employs just six basic inflections for the twelve case functions; this includes absolutive, which has zero realisation with common nouns. In addition, allative and aversive involve increments to locative. The major feature of this language is the pervasiveness of what we have called 'locative' – *-ta* ~ *ngka* ~ *-la*. If we include the foundational role of locative with allative and ablative on proper nouns, this inflection is involved in six of the case functions in table 10.1. This contrasts with the neighbouring Warlpiri where the cognate inflection is confined to function [iv] 'specification of position of rest'.

A full comparison of the case systems of the five languages from table 10.1 would be a book-length study. We have indicated the most important similarities and differences but our treatment has necessarily been somewhat sketchy and oversimplified. More detailed distinctions than just these twelve case functions should properly have been considered. For instance, most of the semantic range of the dative inflection *-nda* in Yidiny is covered by locative in Western Desert ('show to', 'tell to', and so on) but a part of this range would be rendered by purposive *-ku* (e.g. 'cry for'); and while most examples of dative in Yidiny would be rendered by *-gu* in Dyirbal, some might be expressed by the Dyirbal locative. Ablative in Western Desert covers the sense of locative-b in Kalkatungu e.g. 'he fell on his back'; and so on.

Our comparison does, nevertheless, provide a tolerably accurate picture of the types of correspondence that hold between the markings of case functions in different non-prefixing languages. Doubling or trebling the sample of languages simply confirms the picture that has emerged. Generally, around half-a-dozen basic inflections cover the twelve functions we distinguished, but different functions fall together in different languages. A common coincidence is purposive and genitive, which are both realised by *-gu* (= *ku*) in languages from all parts of the continent – besides Kalkatungu and Western Desert we can note Thargari from the Western Australian coast, Nyawaygi from the north-east Queensland coast, Dhuwala/Dhuwal from Eastern Arnhem Land, and Pitta-Pitta, amongst many others. Instrumental falls together with ergative – as in Dyirbal, Kalkatungu, Warlpiri and also Thargari, Nyawaygi, Dhuwala/Dhuwal and Pitta-Pitta – or with locative – as in Yidiny, Western Desert, and also Yanyuwa, Warluwarra, and Ngarluma. Locative is also used for the aversive function in Dyirbal and Warrgamay. Causal coincides with aversive in Kalkatungu and in Pitta-Pitta. Purposive is identical to allative in Dyirbal and in Gumbaynggir. And so on – there are always a number of case functions that fall together; the patterns of coincidence are repeated in different Australian languages but no one language is identical to any other in the exact functional range of its case inflections.

One further interesting phenomenon has been reported for some languages in and around the Gulf country. In Pitta-Pitta, Yukulta, Lardil and a few neighbouring languages there appear to be different core inflections depending on whether the sentence is in future or non-future tense. It looks at first blush as if nominals take a portmanteau inflection that indicates both case and tense. We discuss this phenomenon further in 13.4, showing that the traditional description (as just given) is rather misleading; it is a type of 'ergativity split' that has a syntactic explanation.

Inflections on verbs are for the most part quite different from those on nominals. A striking exception is purposive *-gu* which in many languages functions as both a nominal and a verbal affix. In Dyirbal, for instance, *-gu* can be added to a peripheral NP ('I'm going for fish') or to the verb of a complement clause ('I'm going to spear fish') with very similar semantic effect.

10.3 Reconstruction of case inflections

We can now make suggestions concerning the case system of proto-Australian. These are based on extensive comparisons of the case systems of modern languages, of which a representative sample was presented above. We first consider the original SYSTEM of cases, and then in 10.3.2 look in more detail at their formal realisations.

10.3.1 *Original case system*

The common feature of PN case systems is the recurrence of three basic inflections:

[a] ERGATIVE *-du* after consonants, *-lu* ~ *-ŋgu* after vowels;
[b] LOCATIVE *-da* after consonants, *-la* ~ *-ŋga* after vowels;
[c] PURPOSIVE *-gu*.

Ergative *-du* ~ *-lu* ~ *-ŋgu* or some development from it probably occurs in every language outside the nonPN area; purposive *-gu* must occur in more than 90 per cent and locative *-da* ~ *-la* ~ *-ŋga* in almost as many languages. This is exemplified in the five languages of table 10.1. These inflections will always correspond to case functions [iii], [iv] and [viii] respectively – [a] will mark a transitive subject ('THE MAN hit me'), [b] position of rest ('he sat ON THE STONE') and [c] the goal towards which an activity is directed ('I'm going walkabout FOR HONEY'). Sometimes inflection [a] may also cover instrumental, [b] may cover allative and/or aversive and/or instrumental, [c] may cover dative and/or genitive and/or allative, and so on. But these extensions differ from language to language and we cannot be sure that any of them definitely held in the proto-system. What we can be CERTAIN of is that pA had these three inflections and that (at the least):

-du ~ *-lu* ~ *-ŋgu* marked A (transitive subject) function,
-da ~ *-la* ~ *-ŋga* marked locative function (position of rest);
-gu marked purposive (goal) function.

We noted that for proper nouns in the Western Desert language, allative and ablative suffixes have to be added onto locative. Inflection *-da* ~ *-la* ~ *-ŋga* could in this instance be described as a 'general local' case; if it bears no increment it has the unmarked locative interpretation. A similar situation holds in Wemba-Wemba, a language of western Victoria, whose main cases are:

ABSOLUTIVE (S, O functions) ϕ;

ERGATIVE/INSTRUMENTAL *-gu* after a vowel, *-u* after a consonant;

GENERAL OBLIQUE *-ga* after a vowel, *-a* after a consonant.

It is likely that ergative-instrumental *-(g)u* has developed from **-ŋgu* and general oblique *-(g)a* from **-ŋga*. (There are other languages – including Dyirbal and Kalkatungu – that reduce *-ŋgu* and *-ŋga* to *-gu* and *-ga* under certain circumstances – see 10.2 and notes.)

The general oblique in Wemba-Wemba is used for allative and aversive functions, probably also for purposive (data are scanty) and it can be used for locative. But there are also specific local inflections that involve additions to the general oblique form:

-(g)a+l	LOCATIVE-i	'on, direction towards'
-(g)a+da	LOCATIVE-ii	'in'
-(g)a+ŋ	ABLATIVE	'from'

The Western Desert and Wemba-Wemba examples rather suggest that *-da*~*-ŋga*~*-la* may well have been a general oblique case in pA, whose unmarked reference was to locative function. In some modern languages more cases have evolved to cover some of the original *-da* functions, and this inflection is now confined to its central 'locative' reference.

A fourth suffix that recurs through table 10.1 marks ablative function. This is *-ŋunu* in Dyirbal, *-ngurlu* in Warlpiri (added to the stem in each instance), *-nguru*~*-ngurni* in Western Desert (added to common noun stems but preceded by locative with proper nouns), and *-ŋu* in Kalkatungu (added to locative-a). There is also the *-ŋ* that is in Wemba-Wemba added to general oblique to form ablative. The second syllables differ widely, but there is surely some significance in the recurrence of initial *-ŋu* or *-ŋ* in these ablative forms.

Causal is identical to ablative in a fair sprinkling of languages – in Yidiny (where the form is, however, *-mu*~*-m*) and also in Walmatjari (inflection *-ngurni*) and amongst others. The situation in Kalkatungu, where causal and ablative involve the addition of *-ŋu* to the canonical cases ergative and locative, respectively, suggests a hypothesis concerning the proto-system:

in pA, causal involved the addition of a form like *-ŋu(ru)* to ergative *-du*~*-lu*~*-ŋgu*;

in pA, ablative involved the addition of a form like *-ŋu(ru)* to locative *-da*~*-la*~*-ŋga*.

We cannot be certain of the form of the increment; it would probably have been disyllabic, and the first syllable must have been -*ŋu*. -*ŋuru* is the commonest modern inflection for ablative, occurring in most Western Australian languages and also in Gupapuyŋu, from Eastern Arnhem Land (it is added after locative with human nouns from Gupapuyŋu). Ablative/causal forms in modern languages show variation on a pattern; but we are not yet in a position to decide on a definite proto-form.

This hypothesis is semantically plausible. A causer NP will be likely to be in A function for an earlier event – if I have a sore caused by a hornet ('hornet-CAUS') then the hornet must have stung me ('hornet-ERG'), literally 'I have a sting from by a hornet'. And similarly for the local cases: if someone is moving from some place ('place-ABL') then it is likely that at an earlier time he was at that place ('place-LOC'), literally 'he came from at home'. Many languages outside Australia do have a single case or preposition covering both ablative and causal functions.

Morphological evidence is also, of course, required. We are effectively suggesting that Kalkatungu preserves the original system in this respect (it has changed in a number of other ways). And that the formation of ablative from general oblique in Wemba-Wemba is also an archaic trait, as is the addition of ablative to locative for proper nouns in Western Desert and for nouns with human reference in Gupapuyŋu. Other languages – the great majority – have simply dropped the locative affix that used to intervene between stem and ablative -*ŋu*(*ru*), so that ablative has developed from an original increment to take on the status of a distinct case inflection. This is an entirely natural change – there is always a tendency to simplify frequently occurring inflections, and a trisyllabic, bimorphic ablative would surely be rather unwieldy.

Where locative drops before -*ŋu*(*ru*) for ablative, it would be consistent for ergative to drop before -*ŋu*(*ru*) for causal; we can suggest this as an explanation for the identity of ablative and causal in a number of modern languages.

Further support for the hypothesis concerning the origin of causal and ablative comes from Banjalang, in eastern New South Wales, and from Gupapuyŋu. Both of these languages have causal falling together with ergative. On grammatical grounds two distinct cases can be recognised (one core, and one peripheral), but they have identical realisation; for instance, causal but not ergative can occur in intransitive sentences (e.g. 'he died of FLU'). An alternative process of simplification has applied in these languages, the second element having simply been dropped from an original -ERG + *ŋu*(*ru*) causal. (In Wangkumara, from south-west Queensland, ergative, ablative and causal all fall together as -(*a*)*nrru* with one class of nouns.)

It is clear that individual languages have developed the pA case system in quite different ways, with various shifts of meaning and function. Consideration of Dyirbal, Western Desert, Wemba-Wemba and other languages suggests that locative *-da* ~ *-la* ~ *-ŋga* may originally have covered aversive (perhaps having a special increment optionally to mark this function). Aversive in Yidiny is also historically derived from locative, lending further support. Pitta-Pitta has ergative *-lu*, and an affix *-la* for both aversive and causal functions; locative is *-yina*. We can suggest that *-lu* originally covered ergative and (through an increment *-ŋu*(*ru*)) causal, and that *-la* was used for locative and aversive. But then a new locative *-yina* evolved and the original *-la* was now confined to aversive function. At a later stage, *-la* expanded to include causal function, replacing the original causal inflection. (There is a strong semantic connection – compare aversive in 'I'm frightened of the hornet' or 'I'll go inside for fear of the hornet' with causal in 'I'm sore from the hornet'.) Note that a single inflection also covers causal and aversive in Kalkatungu, but in this language it must be causal – which retains its original -ERG + *ŋu* form – that has expanded to cover aversive. (Kalkatungu and Pitta-Pitta are geographically separated by only one language but they are not closely genetically related. It seems likely that having a single inflection for causal and aversive is an areal feature (cf. 8.4) and that the two languages have achieved this in quite different ways.)

The inflection *-gu* is always used for purposive function and usually also for dative. It is likely (although by no means certain) that *-gu* also covered dative in pA. In Western Desert *-da* ~ *ŋga* ~ *-la* has expanded its syntactic range into dative, at the expense of *-gu*, while in Yidiny a new dative suffix *-nda* has evolved (it can be shown that this *-nda* is a recent contraction of **-ŋunda*). A fair number of modern languages also use *-gu* for genitive; in some others a genitive involves an addition to *-gu*, as Warlpiri *-ku* + *rlangu*, Gumbaynggir *-gu* + *ndi*. In the remaining languages genitive is quite different from purposive–dative, and there are a wide variety of different suffixes found. The form *-ŋu*, in Dyirbal, recurs as a nominal genitive in other languages from north-east Queensland; *-ŋu* is also found as genitive suffix to pronouns in a number of languages, from different parts of the continent (11.1.3). No other language has a genitive suffix similar to Yidiny *-ni*.

We can tentatively conclude that in pA *-gu* may have covered purposive, dative and genitive functions; this is maintained in many modern languages but some have brought in an increment specially to mark genitive while others have evolved a new genitive, from some other source. There is further discussion of the syntactic connection between dative and genitive in 10.3.3.

In modern languages allative can be identical to locative or to purposive–dative or can involve an increment to one of these cases. In Walmatjari the 'towards' allative is locative plus purposive! There is no evidence that pA had any sort of distinct allative case and we must assume that this function was originally rendered by locative or by purposive or by a mixture of the two.

In summary, we can reconstruct the proto-Australian case system as:

[a] ABSOLUTIVE, for S and O functions – ϕ.
[b] ERGATIVE, for A function – *-du*~*-ŋgu*~*-lu*; also covering causal function, for which there was an (obligatory or optional?) increment *-ŋu(ru)*.
[c] LOCATIVE (or perhaps 'general oblique') for locative function – *-da*~*-ŋga*~*-la*, also covering ablative, with a special increment *-ŋu(ru)*; and aversive; and possibly allative.
[d] PURPOSIVE *-gu*; also covering dative and genitive functions, and possibly allative.

A fifth case, ACCUSATIVE *-nya*, occurs freely with pronouns, marking O function, and is reconstructable for the pA pronominal system. It may have occurred on proper nouns in pA, as it does in Dyirbal and many other modern languages. (We saw that in Western Desert it has been extended to mark S as well as O for proper nouns; in Dhalandji, *-nha* marks O function with pronouns and also all nouns and adjectives – see 11.1.) This inflection will be discussed in the next chapter, on pronouns. The remaining function, instrumental, falls together either with ergative or with locative; more will be said about it in the next section.

We are typically only able to reconstruct a part of the grammatical complexity of any proto-language. On the basis of modern Romance languages, for instance, we would posit three cases for proto-Romance – this is just a subset of the five or six cases that operated in Latin. In their development from Latin, Romance languages have been steadily losing case inflections – those distinctions that have been lost in all modern languages cannot be reconstructed.

There is evidence that most Australian languages have been moving in the opposite direction to Romance. We can only be certain of three non-zero case inflections in proto-Australian; we can guess (but be less certain) that there were a number of increments, such as ablative-causal *-ŋu(ru)*, added to some of the basic cases. Every modern language outside the northern prefixing area has more case inflections than the postulated system; Yidiny, for instance, has twice as many. It seems that there has been a tendency in Australian languages towards developing more complex case systems – according inflectional status to what were originally post-inflectional increments (as with ablative *-ŋu(ru)*), deriving new inflections from former postpositions (this may well be the origin of Yidiny dative *-nda* < **-ŋunda* and Pitta-Pitta locative *-yina*, for instance), and so on. The syntactic–semantic range of one inflection will have increased in language A and that of another inflection contracted accordingly; in language B there will have been different extensions, in other directions. Generally, it seems that each language has expanded and added to the original pA system in its own individual manner; each type of expansion recurs, but no two languages show exactly the same generalisations and revisions.

We can be reasonably confident that we have captured the complete set of pA nominal inflections; it is unlikely that any original inflection would have dropped out in almost every branch of the family when the whole tendency has been towards augmentation. The inflections that we have reconstructed are remarkably pervasive, occurring in the great majority of modern languages; other modern inflections are in comparison extraordinarily restricted, each appearing in just one – or at most three or four – modern languages.

The so-called non-Pama-Nyungan languages, in the central north, have, as already mentioned, undergone the most dramatic changes from the pA system. There have been a number of phonological shifts and also the development of complex verbal structures, leading to the dropping out of use of core syntactic cases. A number of these languages do have an ergative inflection – in some it is used only when ambiguity would otherwise result – which might be related to *-du* ~ *-lu* ~ *-ŋgu*; many of them show a dative or allative *-gu*. Detailed work is needed on the development of case systems in prefixing languages, and their relation to the predominant pattern over the rest of the continent, which we take to be a direct reflection of the pA system.

10.3.2 *Original case forms*

We are left with three outstanding problems concerning the forms of pA cases, and the relations between them:

[a] Ergative has, as a rule, a fair number of phonologically conditioned allomorphs in every modern language. Comparison of these forms suggests that in pA ergative was *-du* following a consonant (with assimilation of *d* in place of articulation to a preceding nasal, lateral or *y*) and either *-ŋgu* or *-lu* following a vowel.

The first question here concerns what conditioned the choice between *-ŋgu* and *-lu* in pA. We noted that in Warlpiri *-ŋgu* occurs on a disyllabic stem and *-rlu* on longer stems (many languages in Western Australia follow the same pattern). In Western Desert, on the other hand, *-ŋgu* occurs on common and *-lu* on proper nouns. There is a statistical correlation between these two criteria – the great majority of the more frequent common nouns are disyllabic, and probably the majority of proper nouns have three or more syllables. Was pA like Western Desert, and has an original syntactic–semantic conditioning been reinterpreted as phonological conditioning in Warlpiri and other languages? Or was pA like Warlpiri with the Western Desert system representing the innovation? How can we decide between these two alternatives?

The second question concerns the phonological form of the ergative allomorphs. If a certain category has a number of different forms in a modern language they must have evolved either by suppletion (that is, by combining parts of quite different paradigms, as in English *go/went*) or by regular changes from a single canonical proto-form. Allomorphs *-du* and *-lu* are similar enough (both beginning with an apical non-nasal non-rhotic consonant) for it to be likely that they have the same origin. But *-ŋgu* differs markedly from *-lu*∼*-du*. From what single original form could both *-ŋgu* and *-lu*∼*-du* have developed, and by what route?

[b] In almost every modern language locative is exactly the same as ergative, save for the final vowel. This leads us to set up for pA *-da*∼*-la*∼*-ŋga*; the same conditioning factors must have applied to locative as to ergative allomorphs. A few modern languages show some differences in ergative and locative allomorphy – some dialects of Western Desert have ergative *-lu* on common nouns (as on proper nouns) but retain locative *-ŋga*; Yidiny has moved in the opposite direction, coupling *-ŋgu* with *-la*, although there are still traces of *-lu*

and *-ŋga*. But these are isolated exceptions; just about every other language has locative allomorphy following ergative, detail-for-detail.

Why should there be this connection between ergative, a core syntactic case, and locative, a local case? What syntactic connection existed between ergative and locative in pA to explain the isomorphism of modern forms?

[c] Instrumental has the same realisation as ergative, or as locative, in modern languages (although there are probably always syntactic reasons for recognising instrumental as a distinct underlying case – see 10.1, 10.2, 11.3 and 13.3). It NEVER involves any increment to ergative or locative, so there is no support for the suggestion that instrumental originally involved an increment to one of these cases, but has shortened in modern languages (as we were able to suggest for causal and ablative).

Why should instrumental fall together with ergative or locative? What determines WHICH case it coincides with in individual modern languages? Is this connected in any way with the isomorphism between ergative and locative, mentioned under [b]?

Kenneth Hale has put forward the following hypothesis as a solution to problem [a]. Suppose that:

[i] In pA, nominal stems could end in a consonant or a vowel. Ergative was *-du* after a consonant, with the regular assimilation found in modern languages, and *-lu* after a vowel.

[ii] Later-pA or its early descendants introduced the requirement that all disyllabic nominals should end in a consonant. This is precisely the requirement that is observed in a number of modern languages, discussed in 7.2.2. In Anmatjera, for instance, and in languages from the south-east, a final *-ŋ* was appended to disyllabic words that ended in a vowel. Let us suppose that exactly this happened in late pA times, or soon thereafter.

Absolutive and ergative forms of sample nominals in stage [i] and [ii] are shown in the first two lines of table 10.2. Initially, ergative would have been *-lu* on all vowel-final stems; thus *bula-lu* and *gudaga-lu*. But then the absolutive form of *bula* became *bulaŋ*, and soon this was taken as the root form; ergative on *bulaŋ* would be the consonant-final allomorph *-du*, which would assimilate to *-gu* after *ŋ*.

Table 10.2. *An illustration of Hale's hypothesis concerning the origin of ergative allomorph* -ŋgu

original root:	*bula*		*ŋamun*		*gudaga*	
	ABSOLUTIVE	ERGATIVE	ABSOLUTIVE	ERGATIVE	ABSOLUTIVE	ERGATIVE
stage [i]	*bula*	*bula + lu*	*ŋamun*	*ŋamun + du*	*gudaga*	*gudaga + lu*
stage [ii]	*bulaŋ*	*bulaŋ + gu*	,,	,,	,,	,,
stage [iii]	*bula*	*bula + ŋgu*	,,	,,	,,	,,

[iii] Verbal reconstruction, presented in chapter 12, provides evidence that verb stems in pA could end in peripheral nasals -*ŋ* and -*m*, consistent with Hale's suggestion for stage [ii]. In modern languages, though, final peripheral nasals are virtually unknown. We can infer that at a certain historical stage Australian languages proscribed final -*ŋ* and -*m*. These would simply have been dropped from the ends of stems – *bulaŋ* would have become *bula*. What now of ergative *bulaŋ+gu*? An obvious development would be for this form to be retained, but for it to be reanalysed in terms of the new root *bula* as *bula+ŋgu*; under this reanalysis the morpheme boundary would be moved one segment to the left, so that the ergative allomorph after a disyllabic stem ending in a vowel would be -*ŋgu*. The other allomorphs of ergative would have been unaffected by these changes – -*du* would remain after a consonant and -*lu* after a trisyllabic stem ending in a vowel.

These changes give exactly the allomorphic pattern found in Warlpiri and other western languages: We assume that Western Desert has reinterpreted the disyllabic/polysyllabic condition into a common/proper noun distinction. Some modern languages have just -*ŋgu* after vowels (e.g. Dyirbal), other have just -*lu* (e.g. Pitta-Pitta); some have -*ŋgu* on most nominals but a residue of -*lu* forms (e.g. Yidiny). In all of these instances there has been a degree of generalisation of one of the postvocalic allomorphs, at the expense of the other.

Hale's hypothesis is supported by (and was originally suggested to him by) the recent development of some Paman languages from the Cape York Peninsula. In languages from this area a variety of ergative allomorphs may be found – sometimes -*mbu*, -*ndu*, -*lu*, all on roots whose absolutive form ends in a vowel. It is likely that earlier stages of these languages had stems which ended in *-m*, *-n*, or in a vowel; these would have taken regular ergative *-du* (with assimilation) ~ *-lu*. Final consonants have been dropped, leading to the same sort of reanalysis and pluri-allomorphy that Hale suggests as an explanation for pA **-du* ~ *-ŋgu* ~ *-lu*.

We can thus conclude that ergative was, in pA, *-du* following a consonant and *-lu* following a vowel. It is plausible to relate these to a single original form, since changes **l>d* and **d>l* are attested. But in 6.6.3 we suggested that [d] and [l] could have been allophones of a single phoneme in pA. We can represent this by /l/ – it would probably have been realised as [d] word-initially and after a consonant, and as [l] word-finally and between vowels. In terms of our phonological reconstruction, ergative would originally have been *-lu*; modern allomorphs would have developed from this by regular processes of change. (There are still one or two unexplained forms such as Kalkatungu allomorph *-dhu*; note that *-dhu* is also a major allomorph of ergative in Gupapuyŋu. Exceptions like this are, however, quite infrequent. It is likely that further comparative work may provide explanations for them.)

Exactly the same line of argument would apply to locative – the proto-form would have been *-la*. We can now see that, with Hale's historical explanation for problem [a], problem [b] simply dissolves. We were struck by the similarity of detail between ergative and locative allomorphy in modern languages, and thought that it might indicate a hidden grammatical connection between the two cases. But if ergative were *-lu* and locative *-la* in a proto-language, the same changes would affect both instances of *l*, giving rise to the modern isomorphism. What we are left with is simply *-lu* and *-la* as proto-inflections. But we concluded, in 6.6.3, that pA may only have had ten or eleven consonants. It is probably just coincidence that two of the three non-zero case inflections happened to have the same initial segment.

In summary, we have shown that pA had four nominal cases:

ABSOLUTIVE *ϕ*	LOCATIVE *-la*
ERGATIVE *-lu*	PURPOSIVE *-gu*

/g/ was a distinct phoneme in pA and has preserved its status in all modern languages. Purposive *-gu* is remarkably constant through Australian languages showing little of the multiple allomorphy that characterises ergative and locative. It is sometimes lenited to *-wu* after vowels (and Kalkatungu postvocalic allomorph *-V(ya)* remains unexplained – it may well not be a cognate form); but these variants are infrequent and minor.

We have not, however, thrown any light on [c], the problem of instrumental – why this function should be shown by ergative case in some languages but by locative in others. This remains an open question – one of the most tantalising puzzles in comparative Australian studies. It may well be, in fact, that it has a syntactic, rather than a morphological, explanation.

10.3.3 *Purposive–dative and genitive*

We mentioned in 10.1 that genitive could, strictly, be classed as a derivational affix rather than as an inflection. As exemplified in (17)–(18), genitive takes a case inflection agreeing with the head 'possessed' noun and functions rather like a derived adjective. Thus, even though purposive–dative and genitive are both realised by *-gu* (as is the situation in a number of Australian languages) the two functions can be distinguished on grammatical grounds – purposive–dative will in no circumstances be followed by any other inflection whereas genitive normally agrees in case with the 'possessed' noun it modifies.

Why then should purposive–dative coincide with genitive in many languages? And why should a distinct genitive have evolved in others? No complete answers can be given to these questions. But in connection with the first it is surely relevant to note a semantic connection between dative and genitive. Compare the following two sentences in Nyawaygi, a language which has *-gu* for purposive, dative and genitive functions:

(25) *nyaŋga waaŋal walma biibi+gu*
IT+ABS boomerang+ABS carry+IMP father+DAT
'Carry the boomerang over for father!'

(26) *biibi+gu nyaŋga waaŋal*
father+GEN IT+ABS boomerang+ABS
'The boomerang is father's.'

Plainly, the fact that a beneficiary NP is marked by *-gu* could be connected with the use of *-gu* to mark an alienable possessor.

We mentioned that our equation of syntactic functions between the five languages in table 10.1 was of a rather rough and ready nature. One further subtlety is relevant to the point just made. Dative *-nda* in Yidiny is used to mark the complement of verbs such as 'speak', 'take', 'carry' and 'give'. Dyirbal uses purposive *-gu* for most of these. But the predominant 'giving' construction in Dyirbal involves marking the recipient not with *-gu* but instead with genitive *-ŋu*. Compare:

(27) *bala* *barri* *baŋgun* *yibi+ŋgu* *budi+n*
IT+ABS axe+ABS SHE+ERG woman+ERG carry+PRES
bagul *yara+gu*
HE+PURP man+PURP
'The woman is carrying the axe over to the man.'

(28) *bala* *barri* *baŋgun* *yibi+ŋgu* *wuga+n*
IT+ABS axe+ABS SHE+ERG woman+ERG give+PRES
baŋul *yara+ŋu*
HE+GEN man+GEN
'The woman is giving the axe to the man.'

(29) *baŋul* *yara+ŋu* *bala* *barri*
HE+GEN man+GEN IT+ABS axe+ABS
'The axe belongs to the man.'

In (28) 'the man' is in genitive case, effectively functioning as alienable possessor to the O NP 'the axe', exactly as it does in the possessive construction (29). But note that a 'proleptic construction' like (28) is in Dyirbal only used with verbs of giving, where the beneficiary is specified as becoming possessor (and not with verbs like 'carry', which demand a purposive complement as in (27)).

More work is needed on the connection between purposive, dative and genitive in pA. A priori it seems possible that *-gu* may at first have had a purposive-dative sense which was later extended also to cover genitive. Then, in view of the different syntactic statuses of purposive–dative and genitive, a new genitive developed in some languages, often based on *-gu*. This can be viewed as a part of the general expansion of case systems that has characterised the development of Australian languages. In Dyirbal, where a new nominal genitive *-ŋu* has entered the language (possibly analogised from the pronoun paradigm), this has been extended to cover complements of verbs of giving, effectively completing the circle.

10.4 Derivational suffixes

Each word has an obligatory root and final inflection; between these two constituents there can optionally occur one or more of a number of derivational suffixes. Some will derive a stem with a different part-of-speech membership from that of the original root; other derivational affixes will not affect syntactic function.

Every Australian language has derivational affixes which derive transitive and intransitive verb stems from nominal roots and stems; these are discussed in 12.4. There are usually also one or two suffixes for deriving nominals from verbal roots – generally agentive nominals like 'hunter' from 'hunt', and sometimes other types of deverbal noun like 'the vomit' from 'to vomit', and 'a fight' from 'to fight'. Processes of nominalisation are not used as much as those of verbalisation, and may be entirely lacking from some languages.

We can deal here with those derivational suffixes which when added to a nominal root derive a further nominal stem, illustrating the types that occur with examples chosen largely from Yidiny and Dyirbal (Yidiny shows eight affixes of this type and Dyirbal around eighteen – fairly typical inventories).

There are frequently dual and sometimes plural affixes (plural is sometimes shown by reduplication). Plural, where it occurs, varies a great deal from language to language, but dual is often a reflex of the pA lexical root *guDHarra(n)* 'two'. This has reduced to give a dual suffix *-gudha* in Balyku and many other languages of Western Australia, to *-jarra* in Warlpiri and to *-jarran* in Dyirbal, for instance. Number suffixes on nominals are not universal, however; they are lacking in Yidiny, which has simply to use number adjectives.

In some eastern languages there are suffixes meaning 'one of a pair' and 'one of a group larger than two', that effectively mark coordination within an NP. Thus in Dyirbal one can say:

(30) *jani+garra* (*mijiji+garra*)
Jani+ONE-OF-PAIR+ABS white-woman+ONE-OF-PAIR+ABS
bani-nyu
come+PRES
'Jani, being one of a pair (and a white woman, being the other member of the pair) are coming.'

The parenthesised constituent can be omitted, with *jani+garra* then simply indicating that there was some other (unspecified) person involved. Note the contrast between *mijiji+garra* 'a white woman and someone else' and the dual form *mijiji+jarran* 'two white women'. The Dyirbal suffix *-maŋgan* means 'one of a group larger than two' and can be added to just one noun, or to each of a string of coordinate constituents.

In Ngiyambaa, from New South Wales, *-bulaa* (presumably cognate with the lexical adjective *bula* 'two' in other languages) indicates 'one of a pair' and *-buy* 'one of a group larger than two'. Yidiny has an affix *-ba* 'one of a group of two or more' that corresponds to both of the affixes in Dyirbal and Ngiyambaa.

Some nominal derivational affixes simply provide non-numerical quantification – Yidiny has *-bi* 'another', *-jamu* 'only'; Dyirbal has *-gayul* 'the same', *-mumbay* 'all (and only) the —'; and so on. There is often an intensifier that can be added to an adjective or noun with the meaning 'very, really' – Warrgamay *wurrbi+bajun* 'very big' was used in (1) of chapter 9; *maal+bajun* means 'really a man'. Nyawaygi intensifier *-nyuga* 'very' has the same form as the adjective *nyuga* 'big'; the affix can be used with any type of adjective e.g. *wirril+nyuga* 'very tired' and even *janyji+nyuga* 'very small'. In Yukulta *-mirra* 'very' is probably related to *mirrara* 'good' while the intensifier *warra* in Guugu Yimidhirr (here a separate word, not an affix) is related to the adjective *warra* 'bad'.

The affix *-barra* 'pertaining to, belonging to [a place]' occurs in Yidiny, Dyirbal and most of the languages south of these two in Queensland e.g. Yidiny *digarra+barra* '[person/thing] from the beach'. In this area the names of local groups within tribes (see 2.4) typically involve *-barra* e.g. Dyirbal *gambil+barra* 'tablelands people'. An affix with different form but similar meaning is found in languages from other regions.

Perhaps the most frequent nominal derivational affixes (which are probably found in at least all non-prefixing languages) are comitative 'having' and privative 'without, not having'. These essentially serve to derive adjectival stems from any sort of nominal root. The forms in Yidiny are comitative *-ji* after consonants and *-yi* after vowels, and privative *-gimbal*. Thus:

(31) *waguuja* *gudaga+yi* *gali-ŋ*
man+ABS dog+COMIT+ABS go+PRES
'The man with a dog is going.'

Comitative/privative can go onto both a noun and its modifying adjective; they agree in inflection with the head noun that they modify, e.g.

(32) *waguja+ŋgu wagal+ji+ŋgu dagul+ji+ŋgu*
man+ERG wife+COMIT+ERG three+COMIT+ERG
gudaaga wawa+l
dog+ABS look at+PRES
'The man with three wives is looking at the dog.'

Many languages do have a form cognate to Yidiny *-ji*~*-yi* for comitative – for instance *-dhirr* in Guugu-Yimidhirr, *-girri* in Warrgamay, *-gi* in Nyawaygi and maybe even *-garri* in Gumbaynggir and *-dharri* in Wiradharri (which would seem to be the correct phonological form of the language name generally quoted as Wiradhuri). It is often a part of the language name – as Guugu-Yimi*dhirr* (see 2.4), Nyaway*gi* and Wira*dharri*. Sometimes it can be used to derive a tribal from a language name – the people speaking Yidiny refer to themselves as the Yidiny-*ji* tribe, literally 'with the Yidiny language'.

Other languages have quite different forms of the comitative suffix e.g. Dyirbal *-bila*, Warlpiri *-kurlu*, Kalkatungu *-yan*; these can again enter into tribal and language names e.g. Waŋaay-*buwan* 'no-having' = 'the people who use *waŋaay* for "no"'. In Western Desert comitative is *-tjarra*, probably a development from *gujarra* 'two'. The privative suffix tends to have a different form in almost every language. (The privative suffix in one language is sometimes cognate with the negative particle in another.)

Comitative and privative often have a wide semantic range, although there is a good deal of variation from language to language. In Yidiny, for instance, *-ji*~*-yi* can be used in 'he sat WITH HIS WIFE', 'I'm going out WITH A SPEAR', 'they went walkabout BY MOONLIGHT', 'he cut it WITH EASE', and so on.

Another type of suffix that derives an adjectival stem from a noun is exemplified by Dyirbal *-ŋarru* 'like a —' (as in 'he has a face LIKE A WALLABY'). Some other languages have a nominal derivational affix with this meaning but others lack it (Yidiny has a postinflectional clitic with the sense 'like a —'). Individual languages will have a few further derivational suffixes – maybe a comparative, or 'some' (which may otherwise be dealt with by a separate word), or an adjectival negator (*-munu*, in some Western Desert dialects, is very like *un-* in English), and so on.

Most Australian languages show nominal reduplication, often (but not always) indicating plurality – thus Dyirbal *barribarri* 'axes', *bulganbulgan* 'many big ones'. But there are variations – in Kalkatungu, for instance, reduplication can indicate intensity – *jagabi-* 'to listen', *jagabi+jagabi-* 'to listen intently'; *buyud* 'hot', *buyud+buyud* 'very hot' — while in the Western Desert language one of the senses of reduplication is to indicate 'unreality' – *wati* is 'man' but *wati+wati* might be used to describe children playing at being adult men. And in Diyari reduplication indicates diminutive e.g. *kinthala* 'dog', *kintha+kinthala* 'little dog, puppy'.

11

Pronouns

As Sir George Grey first pointed out in 1841, there are obvious similarities between the forms of both first and second person pronouns in different Australian languages. These appear at first sight to be less systematic than the similarities between nominal inflections surveyed in the last chapter. However, detailed comparison does permit reconstruction of an original pronominal system from which almost all modern forms can be shown to be derived. Eastern languages generally preserve the original pronominal system fairly closely while in many western languages there has been radical restructuring and reanalysis.

We mentioned in 9.7 that whereas nouns generally have a single case (absolutive) covering both S and O functions and a different case (ergative) for A function, first and second person pronouns in Australian languages normally have the same form (nominative) for S and A functions with a distinct form (accusative) for O function. In a few languages singular pronouns show a third pattern, with different forms for all of S, A and O.

We have already suggested that in prefixing languages from the central north the original free-form pronouns have reduced to become bound affixes to verbs; free-form pronouns have been reformed, seemingly on a different pattern in each language. In this chapter we first survey free-form first and second person pronouns in a sample of non-prefixing languages that have singular/dual/plural systems; we then attempt to reconstruct the proto-system and examine the paths of development from this to the various modern pronominal systems. In 11.1.6 we look at minimal/augmented pronoun systems, found in some northern languages of both prefixing and non-prefixing types, and discuss whether the pA system could have been of this type. Section 11.2 looks briefly at 'third person pronouns', which do vary much more from language to language.

Section 11.3 considers bound pronominal clitics and examines how far these can be regarded as historically derived from free-standing pronouns and the general ways in which they have developed. A final section discusses indefinite–interrogative pronouns.

Numerals '1', '2' and '3' will be used to refer to first, second and third persons; and 'sg', 'du' and 'pl' for singular, dual and plural numbers. 'Plural' will always be used to refer to more than two, 'non-singular' ('n-sg') referring to anything more than one; thus 1 du and 1 pl are the n-sg first person pronouns, and so on. 'Incl' and 'excl' abbreviate 'inclusive' (a 1 n-sg pronoun whose reference includes the addressee) and 'exclusive' (excluding the addressee).

11.1 First and second person pronouns

11.1.1 *Sample paradigms*

Table 11.1 gives the full paradigm of pronouns in WARRGAMAY (they were briefly mentioned in 9.7). There is a three-term number system – singular, dual and plural – in both persons. Warrgamay does not have different inclusive and exclusive forms for 1 du and 1 pl (though distinct inclusive and exclusive 1 n-sg pronouns do occur in more than half the languages of the continent). Inclusion is shown simply by juxtaposing pronouns, e.g. *ŋali ŋinba* 'you and I' and exclusion by juxtaposing either the 'third person singular pronoun' (see 11.2) or a noun to 1 du or 1 pl e.g. *ŋali bada* 'the dog and I'.

The n-sg pronouns in Warrgamay can be tidily analysed into their constituent morphemes, as shown by the symbols '+' in table 11.1. The roots are:

1 du *ŋali*	2 du *nyubula*
1 pl *ŋana*	2 pl *nyurra*

And case marking is:

S and A functions (nominative case) – just the root is used;
O function (accusative case) – root + *-nya*;
genitive – root + *-ŋu* (= nominal genitive);
other cases – oblique stem (root + *n*) + regular nominal inflection.

As shown in (10)–(13) of 9.7, nominals in Warrgamay have absolutive case (with zero realisation) for S and O functions and ergative (*-ŋgu* ~ *-du*) for A. The accusative suffix *-nya* is obligatory with pronouns; it has been heard occasionally (and always optionally) added

Table 11.1. *Warrgamay first and second person pronouns*

	intransitive subject S	transitive subject A	transitive object O	genitive	oblique stem	
1 sg	*ŋayba*	*ŋaja*	*ŋanya*	*ŋaygu*	*ŋaygu+n-*	'I'
1 du	*ŋali*		*ŋali+nya*	*ŋali+ŋu*	*ŋali+n-*	'we two'
1 pl	*ŋana*		*ŋana+nya*	*ŋana+ŋu*	*ŋana+n*	'we all (more than 2)'
2 sg	*ŋinba*	*ŋinda*	*ŋina*	*ŋinu*	*ŋinu+n-*	'you (singular)'
2 du	*nyubula*		*nyubula+nya*	*nyubula+ŋu*	*nyubula+n-*	'you two'
2 pl	*nyurra*		*nyurra+nya*	*nyurra+ŋu*	*nyurra+n-*	'you all (more than 2)'

Dative–purposive *-gu*, locative–aversive *-da*, ablative *-iny* are all added to the oblique stem.

to a noun in O function. The nominal genitive is *-ŋu*, identical to that on n-sg pronouns. On nominal stems, dative–purposive is *-gu*; locative–aversive is *-ŋga* following a vowel and *-da* (with assimilation) after a consonant; ablative is *-nyiny*, with the initial *-ny-* (optionally) dropping following a consonant. Pronominal inflections coincide exactly with these (except that ablative is invariably *-iny*) when oblique pronominal stems are recognised, with a final *-n*. If we took these inflections to be added directly to the root, they would have the forms *-ngu*, *-nda* and *-niny*, significantly different from the nominal affixes.

The sg pronouns in Warrgamay are less obviously analysable. The oblique stem does involve the augment *-n*, but it is added to the genitive form, not to the SA form as with non-singulars. Examination of forms in the first four columns suggests roots *ŋay* and *ŋin* respectively, giving:

	S	A	O	genitive
1 sg	*ŋay+ba*	*ŋay+ja*	*ŋay+nya*	*ŋay+gu*
2 sg	*ŋin+ba*	*ŋin+da*	*ŋin+nya*	*ŋin+u*

There are, however, too many weak points in this division for it to be justifiable as a synchronic analysis. To explain the accusative forms we would have to say *-y+ny->-ny-* and *-n+ny->-n-*; but *-yny-* and *-nny-* are allowable clusters both within morphemes and at morpheme boundaries in Warrgamay (see 6.6.1). Genitives *-gu* and *-u* both differ from the genitive suffix *-ŋu* that occurs with nominals and n-sg pronouns. The analysis of S forms in terms of an affix *-ba* is phonologically acceptable; but there are no other instances of *-ba* in Warrgamay and one hesitates to recognise a morpheme on the basis of occurrence in only two words. Finally, the putative *-ja*~*-da* in A forms is similar to ergative *-ju*~*-du* (following *y* and *n* respectively) except for the final vowel; and with nominals *-ja*~*-da* marks locative, not ergative, case. (We would also need a rule *-y+j->-j-*, parallel to *-y+ny->-ny-*, although *-yj-* is also an allowable cluster in modern Warrgamay.)

We cannot validly analyse the sg pronominal forms *ŋayba/ŋaja/ŋanya/ŋaygu* and *ŋinba/ŋinda/ŋina/ŋinu* within a grammar of Warrgamay. Note that in any case Warrgamay does not show any words or roots that are monosyllabic (except for a handful of nominals, all of which contain a long vowel). However, these pronominal forms are suggestive of an HISTORICAL analysis in terms of **ŋay* and **ŋin*. Only comparison with related languages would be able to check whether there is any wider justification for this, and for the putative affixes *-ba* and *-ja*~*-da*.

The recurrence of similar pronominal forms throughout the non-prefixing area can be illustrated by comparing the Warrgamay paradigm with pronouns in DHALANDJI, spoken more than 2,000 miles away, on the Western Australian coast. This language is unusual in having different forms for A, S and O function over all types of NP constituent, excepting only the 1 sg pronoun. The root of a noun, adjective or pronoun is used alone for S function; ergative *-lu* marks A and accusative *-nha* O function. For 1 sg the root is used for S and A functions; just this pronoun shows a nominative–accusative paradigm. A single suffix appears to cover genitive, dative and purposive: it involves the addition of *-ma* to the root; for 1 sg there is a suppletive genitive–dative–purposive form *jurdi*. Forms are given in table 11.2.

Dhalandji phonology is of the Pitta-Pitta type (6.4) with two apical and two laminal series. It will be noted that interdentals occur in 1 sg *ŋadha*, 2 du *nhubalu* and 2 pl *nhurra* whereas Warrgamay, a single-laminal language, has *ŋaja*, *nyubula* and *nyurra*. Allowing for this, we see that three of the six pronouns are identical – 1 sg, 1 du (incl) and 2 pl. The 2 du form appears to have the last two vowels interchanged – Warrgamay *nyubula*, Dhalandji *nhubalu*. There is identity between

Table 11.2. *First and second person free pronouns in three non-prefixing languages.*

ROOTS

		Dhalandji	Western Desert (Pitjantjatjara dialect)	Warlpiri
1 sg		*ŋadha*	*ngayu*	*ngaju*
1 du	incl	*ŋali*	*ngali*	*ngali*
	excl	*ŋaliya*		*ngajarra*
1 pl	incl	*ŋanhurru*	*nganarna*	*ngalipa*
	excl	*ŋanarna*		*nganimpa*
2 sg		*nyinda*	*nyuntu*	*nyuntu*
2 du		*nhubalu*	*nyupali*	*nyumpala*
2 pl		*nhurra*	*nyurra*	*nyurrurla*

INFLECTIONS

Dhalandji	Western Desert (Pitjantjatjara dialect)	Warlpiri
S function = root A function = root for 1 sg; = root + *lu* for all others	NOMINATIVE(SA) = root + *lu* for 1 sg; = root for all others	ABSOLUTIVE(SO) = root or root + *lu*
ACCUSATIVE(O) = root + *nha*	ACCUSATIVE(O) = root + *nya*	ERGATIVE(A) = root + *lurlu* for sg; = root + *ngku* ~ + *rlu* for n-sg
GENITIVE–PURPOSIVE–DATIVE = root + *ma*, except that 1 sg form is just *jurdi*	GENITIVE–PURPOSIVE = root + *ku* for 1 sg; = root + *mpa* for all others	GENITIVE = root + *nyangu*
LOCATIVE = root + *la*	DATIVE–LOCATIVE = root + *la*	All other inflections are identical to those on nouns (see table 10.1)

Warrgamay 1 pl *ŋana* and the 1 pl excl form in Dhalandji, *ŋanarna*, except that the Dhalandji form has an additional syllable. The most intriguing correspondence is 2 sg *ŋinda–nyinda*; the forms are identical but for the place of articulation of the initial nasal.

In Dhalandji non-singulars pattern exactly like 2 sg; 1 sg lacks ergative inflection for A function and has an idiosyncratic genitive–dative–purposive form. This contrasts with Warrgamay where there are important differences between singulars and non-singulars. The Dhalandji paradigm carries no suggestion of monosyllabic roots *ŋay* and *ŋin*~*nyin*; but the Dhalandji forms *ŋadha* and *nyinda* do appear to relate to A forms *ŋaja* and *ŋinda* in Warrgamay.

The penultimate column of table 11.2 represents the Pitjantjatjara dialect of WESTERN DESERT, a language with just one laminal series (6.4). It is usual to employ voiceless symbols in Western Desert orthography – *tj*, *k*, *p*, *t* and *ng* are exactly equivalent to the *j*, *g*, *b*, *d* and *ŋ* used for Warrgamay and Dhalandji.

1 du *ngali* and 2 pl *nyurra* are identical to Warrgamay and Dhalandji; 1 pl *nganarna* coincides with the Dhalandji 1 pl excl form; 2 du *nyupali* is identical to Dhalandji but for the final vowel.

The sg pronouns in Western Desert show both similarities and differences to those already presented. The *-y-* in 1 sg *ngayu* could be a lenition from *j*, but there is also a difference in the final vowel – *u* in place of Warrgamay/Dhalandji *a*. (We recall that if the Warrgamay A forms had been *ŋaju*, *ŋindu* it would have given much more plausibility to an analysis *ŋay+ju*, *ŋin+du* in terms of ergative marker *-ju*~*-du*.) Note that in Western Desert both sg pronouns end in *u*. There are three differences between Western Desert 2 sg *nyuntu* and Warrgamay *ŋinda*, so that we could scarcely consider relating the forms were it not for Dhalandji *nyinda*, agreeing with Western Desert in the initial nasal and with Warrgamay in the vowels.

All Western Desert pronouns are on a nominative–accusative pattern, like the non-singulars in Warrgamay and 1 sg in Dhalandji. For O function accusative suffix *-nya* is added to the root; *ngayu+nya*, *ngali+nya*, and so on. Genitive–purposive involves the addition of *-ku* to the root for 1 sg and *-mpa* for all others – *ngayu+ku*, *ngali+mpa* etc. Just the root is used for A and S functions except in 1 sg where *-lu* is added; thus, subject of transitive and intransitive verbs is shown as *ngayu+lu*, *ngali*, and so on.

Other Western Desert dialects show minor differences in pronominal forms. The occurrence of *-lu* as a nominative marker with singular pronouns varies as follows:

DIALECT	1 sg SA form	2 sg SA form
Ngaanyatjara	*ngayu+lu*	*nyuntu+lu*
Pitjantjatjara	*ngayu+lu*	*nyuntu*
Nyanganyatjara	*ngayu*	*nyurra*

It may be that ergative case allomorph *-lu*, which marks A function with proper names ending in a vowel in all three dialects (10.2), has been generalised to mark A AND S functions (in terms of a pronoun paradigm which always identifies A and S) with just *ngayu* in the Pitjantjatjara dialect, but also with *nyuntu* in the Ngaanyatjara dialect. In no dialect is *-lu* attached to n-sg pronouns; and oblique cases of 1 sg and 2 sg are always based just on *ngayu* and *nyuntu*, ignoring the *-lu*. (The occurrence of *nyurra* as 2 sg in the Nyanganyatjara dialect is discussed in 11.1.5.)

WARLPIRI, shown in the final column of table 11.2, is like Dhalandji in showing a distinction between incl and excl for 1 du and 1 pl. Like Warrgamay and Western Desert, it is a single-laminal language. Sg roots end in *-u*, like Western Desert; 1 sg *ngaju* corresponds to Warrgamay *ŋaja* and Dhalandji *ŋadha* while 2 sg *nyuntu* is identical to the Western Desert form. *ngali*, which is 1 du in the two languages without an incl/excl distinction, is 1 du incl in both Warlpiri and Dhalandji. In Dhalandji 1 du excl appears to be derived from 1 du incl by the addition of *-ya*, while in Warlpiri 1 pl incl is *ngali* plus *-pa*. 1 pl excl in Warlpiri, *nganimpa*, also involves *-(m)pa*, but there is no separate form *ngani* in Warlpiri; note the similarity to 1 pl *ngana* in Warrgamay (and *nganarna* in Dhalandji and Western Desert). 1 du excl *ngajarra* has the same *ngaj-* as 1 sg but there is no other evidence of an affix *-arra* and there is certainly no justification for synchronic analysis of *ngajarra*. The consonants and first vowel of 2 du *nyumpala* are the same as in the other three languages (with the insertion of a homorganic nasal before the stop) but the last two vowels are again different. 2 pl *nyurrula* looks to be cognate with the form *nyurra* that occurs in the other three languages, although the final *-ula* cannot readily be explained.

The unusual thing about free pronouns in Warlpiri is that they are entirely absolutive–ergative in inflection, like nominals. (Bound-form pronouns follow a nominative–accusative pattern; we return to this in 11.3.) The root is used for S and O, an ergative suffix being added for A function. With n-sg pronouns ergative is the same as with nominals – *-ngku* after a disyllabic and *-rlu* following a longer stem – thus *ngali+ngku* (realised as *ngali+ngki* following application of a rule of vowel harmony – see Notes to 6.7), *ngajarra+rlu*, *ngalipa+rlu* etc. Ergative forms of sg pronouns are not quite as would be expected – they are *ngaju+lurlu* and *nyuntu+lurlu*. It is as if *-lu* is first added to the root (reminiscent of the *-lu* that can be added to sg pronouns in Western

Desert for S or A function), and then the productive ergative suffix *-rlu*. In fact this *-lu*, which is obligatorily included in ergative sg pronominal forms, can optionally be included in SO forms – *ngajulu* alternates with *ngaju* and *nyuntulu* with *nyuntu*.

Genitive involves the addition of *-nyangu*, and dative–purposive of *-ku*, directly to the root in each case – thus *ngaju*+*nyangu*, *ngaju*+*ku*; *ngali*+*nyangu*, *ngali*+*ki*, and so on.

1 and 2 pronouns generally have slightly more restricted syntactic possibilities than nominals. They can of course occur in core functions (S, A and O) and also in most syntactic peripheral cases (dative, purposive, causal, aversive) as well as in genitive form. But pronouns are generally not found in instrumental and sometimes not in all of the local peripheral functions. The case inflection that covers locative frequently has a wide semantic range, including aversive and/or dative etc. (see 10.2); if this is so, pronouns will have a 'locative form' but in some languages it will not occur with purely local reference.

11.1.2 *Reconstruction of non-singular forms*

Comparison of pronoun systems in a wide variety of non-prefixing languages, all of the same singular/dual/plural type that we have exemplified above, enables us to suggest forms that might have occurred in pA.

Non-singular 1 and 2 pronouns show less variation of inflection and form than sg pronouns and are thus a good place to commence reconstruction. The following recur very widely:

1 du (incl) – *ŋaLi*   2 du – *NHu(m)baLV*
1 pl (excl) – *ŋaNa-*   2 pl – *NHurra*

Segments *L* and *N* are apico-alveolar in double-apical languages, and *NH* is lamino-interdental in double-laminal tongues (6.5.2, 6.5.1). Their distributions – *L* and *N* after *a*, *NH* before *u* – correspond exactly to our phonemic and phonotactic reconstruction in 6.5, 6.6 (these forms were in fact used as partial evidence for the reconstruction).

ŋali occurs as the 1 du pronoun in the great majority of non-prefixing languages; it is far more widely attested than any of the other three forms. Languages with an incl/excl distinction generally show one of three patterns:

[a] both incl and excl 1 du forms are based on *ŋali* e.g.

Nyamal (W.A.)   1 du incl *ŋalilu*   1 du excl *ŋaliya*

[b] *ŋali* functions as 1 du incl, with the excl form involving an increment to *ŋali*, as in Dhalandji and:

Ngarla, Balyku etc. (W.A.)	1 du incl	*ŋali*	1 du excl	*ŋaliya*
Nyawaygi (Old)		*ŋali*		*ŋaliliŋu*
Gumbaynggir (N.S.W.)		*ŋalii*		*ŋaligay*
Gupapuyŋu (N.T.)		*ŋali*		*ŋalinyu*
Thargari (W.A.)		*ŋadi*		*ŋadiyi*

(Thargari demonstrates a regular phonological change **l>d*.)
[c] 1 du incl is *ŋali* with 1 du excl being some quite unrelated form (as in Warlpiri).

It will be seen that *ŋali* is closely associated with inclusion ('you and I') where there is an incl/excl distinction; it scarcely ever occurs as the excl form in such a system.

1 pl *ŋana* (or a cognate form such as *ŋanarna*) occurs in many fewer languages than *ŋali* but it is attested from all parts of the continent. It behaves in a quite different way from *ŋali*. If there is an incl/excl distinction then *ŋana* tends to have excl sense e.g.

Nyamal	1 du incl	*ŋanyjula*	1 pl excl	*ŋanarna*
Ngarla		*ŋanyjarra*		*ŋanarna*
Balyku		*ŋanhula*		*ŋanarna*

although there are one or two instances (all in North Queensland) of the reverse situation:

Gugu-Yalanji	1 pl incl	*ŋana*	1 pl excl	*ŋanyjin*
Nyawaygi		*ŋana*		*ŋanaliŋu*

If there is no incl/excl distinction the 1 du pronoun is almost always *ŋaḷi*. In these circumstances 1 pl is frequently *ŋana* (as in Warrgamay) or *ŋanarna* (as in Western Desert).

More than half the languages with a sg/du/pl pronominal system show an incl/excl distinction, but there is no regularity to the distribution – languages of both types are found in every quarter of the continent. And whereas the four forms we reconstructed for 1 du, 1 pl, 2 du and 2 pl cannot be further analysed, it is nearly always possible to provide some analysis of incl/excl forms – 1 du excl may be based on 1 du incl or both may involve the same root *ŋali* (as in examples above); or else 1 pl incl may be based on 1 du incl (as in Warlpiri); or both types of derivation may apply, as in Gupapuyŋu 1 du incl *ŋali*, 1 du excl *ŋalinyu*, 1 pl incl *ŋalimurru* (note that 1 pl excl is *ŋanapurru*). In some languages the same morphological process may derive excl from incl in both dual and plural numbers e.g.

	1 du		1 pl	
	incl	excl	incl	excl
Gumbaynggir	*ŋalii*	*ŋaligay*	*ŋiyaa*	*ŋiyagay*
Nyawaygi	*ŋali*	*ŋaliliŋu*	*ŋana*	*ŋanaliŋu*
Thargari	*ŋadi*	*ŋadiyi*	*ŋanhurra*	*ŋanhurrayi*

This suggests most strongly that an incl/excl distinction should not be attributed to pA but has evolved rather recently in a number of scattered groups of modern languages.

While it is clear that pA would not have had an incl/excl system of the type shown by Dhalandji, Warlpiri and many other languages, we are left wondering why *ŋali* should almost invariably have incl reference in an incl/excl system while *ŋana* more frequently takes on an excl sense. Is there some other type of conclusion we could draw concerning the pA pronoun system from this? We return to this question in 11.1.6.

The forms of 1 du *ŋali* and 1 pl *ŋana* show an initial syllable which is close to the original monosyllabic root *ŋay* that in 11.1.4 we reconstruct for 1 sg. But there is no other known occurrence of dual *-li-* or plural *-na-* and there is no justification for any analysis of *ŋali* and *ŋana*.

From the examples given, 2 sg appears to be built on *ŋin-*, *nyin-* or *nyun-*; we attempt to relate these together in 11.1.4. The 2 pl form *NHurra* occurs in a good proportion of languages (less than *ŋali* but more than *ŋana*) and appears to be similar to 1 sg *nyun-*; but there is no other occurrence of plural *-rra*, and no justification for any analysis of *NHurra*.

In a number of languages the initial laminal nasal of 2 du and 2 pl has lenited to *y*; this also extends to 2 sg if it did begin with initial *ny-* (rather than *ŋ-*). Thus:

Warungu	2 sg *yinda*	2 du *yubala*	2 pl *yurra*
Gugu-Yalanji	*yundu*	*yubal*	*yurra*

The 2 pl pronoun normally exactly reflects the form *NHurra*, or else something completely different; a variant like Warlpiri *nyurrula* is quite unusual (the occurrence of *u* as second vowel may well be due to vowel harmony, a pervasive phenomenon in Warlpiri). In contrast, 2 du pronouns cognate to *NHubaLa* show wide variation in vowels, and in *-b-* ~ *-mb-*. Examples include:

DOUBLE-LAMINAL LANGUAGES
Dhalandji, Balyku – *nhubalu*
Warluwarra – *yibala*
Yanyuwa – *yimbala*
Alyawarra – *mbula*
Bidyara – *yubalu*

SINGLE-LAMINAL LANGUAGES
Dyirbal (northern dialects) – *nyubala*
Dyirbal (Girramay dialect) – *nyubila*
Western Desert – *nyupali*
Warrgamay – *nyubula*
Warungu – *yubala*
Nyamal – *nyumbalu*
Warlpiri – *nyumpala*

We cannot be certain about the reconstruction of this form but *NHu(m)baLV* is perhaps most likely. The change *NH>y* in Warungu and Gugu-Yalanji has been followed by *u>i/y-* for Warluwarra and Yanyuwa. The occurrence of *u* as second vowel in Warrgamay (and in the 2 du *mbula* from Alyawarra, an initial-dropping language of Central Australia) may have been conditioned by *u* in the first syllable, whereas *i* as the second vowel in Girramay could be due to the initial *ny-* (cf. with the regular historical changes in Yinwum and Mbabaram, described in 7.1.2). Between first and second vowels we could have originally had *-mb-*, with the *-m-* dropping in most modern languages (cf. with the Linngithigh change noted in 7.1.1), or else an original *-b-* with a homorganic nasal being inserted before it in the other languages; it is impossible to find any valid reason for preferring one of these alternatives over the other. (The first is perhaps a little more likely, a priori, in terms of changes typical of the Australian family – cf. the survey of nasal dissimilations in 7.5.) The final vowel poses the biggest problem – it is impossible to decide between *-a*, *-u* and *-i*!

A number of languages that lack *NHu(m)baLV* form 2 du by adding a regular nominal dual suffix to 2 sg – the suffix is based on either *gujarra* or *bula*. In Ngarluma (W.A.), for instance, we find:

sg	du	pl
1 *ŋayi*	incl *ŋali*	*ŋaliguru*
	excl *ŋaliya*	*ŋanarna*
2 *nyinda*	*nyindabula*	*nyindaguru*

This type of recent formation suggests, as a working hypothesis, that the original 2 du might have been formed by the addition of *-bula* to 2 sg *nyun* i.e. *nyunbula*. Then the *-n-* could have been dropped in some languages and assimilated to following *b* in others. (But we would then expect still to find a few *-nb-* sequences; none is known.) The second vowel is *u* in modern Warrgamay and Alyawarra, and we could explain the *a* in other languages in terms of assimilation to the final *a*. An etymology of this sort is certainly worthy of serious consideration. But evidence will be presented in 11.1.4 to show that it cannot, in fact, be supported.

11.1.3 *Case inflections*

In almost every language the root of a n-sg pronoun is used for S and A functions; we can call this nominative case, saying that it has zero realisation. The accusative form, for O function, generally involves the suffix *-NHa*; this is realised as *-nha* in double-laminal and as *-nya* in single-laminal languages.

In two easterly pockets accusative *-NHa* has changed to *-na*. This occurs on pronouns in the northerly dialects of Dyirbal (but not in the southerly dialect, Girramay, which retains *-nya*). Accusative *-na* is also found in Waga, Gabi and some nearby languages in south-eastern Queensland. Many languages also employ *-NHa* to mark O function with proper nouns (note that all dialects of Dyirbal have *-nya* on nouns, despite the occurrence of *-na* with pronouns). In a few languages the function of *-NHa* has been extended, as in Western Desert where it marks S as well as O function on proper nouns, and Dhalandji where it marks O function with every type of NP constituent.

Case inflection *-gu* is often used to mark purposive–dative and/or genitive with pronouns, although not so consistently as with nominals; in some north-eastern languages *-gu* is added to a stem obtained from the pronominal root by the addition of *-n*. *-m(b)a* occurs quite widely for these functions in some western languages. Genitive(–dative) *-ŋu* is also found in widely scattered tongues e.g. Nhanda from the central Western Australian coast as well as Warrgamay, from the east coast.

Although sg pronouns may have different forms for each of S, A and O, it is very unusual for n-sg pronouns to have three distinct forms. Exceptions are Dhalandji and also Waga, which is discussed further in the next subsection. And as is often the case with pronouns, in all types of language families, there are some quite irregular systems: in Gumbaynggir from New South Wales, 1 du and 2 sg have a single form covering S and A with a second form for O, but 1 sg, 1 pl, 2 du and 2 pl all have three distinct core forms.

The real oddity, though, is Warlpiri, where the root form of all pronouns covers S and O, and an ergative affix marks A, just like nominals. Reconstruction indicates that an earlier stage of Warlpiri had a nominative–accusative pronominal system, just like the other languages we have surveyed. Free-form pronouns were subsequently reduced to bound suffixes, and these became obligatory constituents of each sentence. The present free-form pronouns are in consequence little used, being required mainly for purposes of emphasis. Warlpiri grammar has been simplified by analogising nominal inflections to apply also to these free-form pronouns.

11.1.4 *Reconstruction of singular forms*

We can now return to the sg 1 and 2 pronouns. The Warrgamay forms, in table 11.1, strongly suggested an historical root **ŋay* for 1 sg, as the basis for S form *ŋayba*, A form *ŋaja*, O form *ŋanya* and genitive *ŋaygu*. We can relate the latter two to accusative *-nya* and genitive *-gu*, but could find no obvious source for *-ba* and *-ja*. The three languages in table 11.2 carry no suggestion of a root **ŋay*. They do have 1 sg roots cognate with the A form in Warrgamay; these are *ŋaDHa* or *ŋaDHu* (with lenition **DH>y* yielding *ŋayu* in Western Desert); the *DH* is always realised as *dh* in double-laminal languages such as Dhalandji. We remarked that if the A form in Warrgamay were *ŋaju* it would make plausible an historical analysis into root **ŋay* and ergative allomorph *-DHu*.

Investigation of other eastern languages does provide support for a root **ŋay*. Consider the singular paradigm in Gumbaynggir, more than 1,000 miles to the south of Warrgamay:

GUMBAYNGGIR	S	A	O	dative	genitive
1 sg	*ŋaya ŋaaja*		*ŋaanya*	*ŋanyu*	*ŋanyu+ndi*
2 sg	*ŋiinda*		*ŋiina*	*ŋinu*	*ŋinu+ndi*

This is suggestive of roots *ŋay* and *ŋi*(*i*)*n* respectively; indeed the vowel length in *ŋaaja* and *ŋaanya* might well be a reflection of the original *y* in **ŋay+ju* and **ŋay+nya*.

Monosyllabic forms for singular pronouns occur in Waga, spoken on the east coast about half-way between Warrgamay and Gumbaynggir; these are used for S function:

WAGA	S	A	O	genitive
1 sg	*ŋay*	*ŋaju*	*ŋanya*	*ŋaarri*
2 sg	*ŋin*	*ŋindu*	*ŋina*	*ŋingarri*

Note that the three left-hand columns differ from Warrgamay only in having A forms with final *u* rather than *a*, and in the S forms lacking final *-ba*.

In 6.6, whilst noting that in most modern languages all or nearly all words consist of at least two syllables, we concluded that proto-Australian may well have had a full complement of monosyllabic roots and words. This inference, drawn on comparative phonotactic grounds, correlates well with our conclusion concerning the original singular pronouns. Modern pronominal paradigms can be easily and systematically explained on the basis of proto-forms 1 sg **ŋay* and 2 sg **ŋin* (~*nyin*~*nyun*?). It appears that, in the development from pA, most modern languages have eliminated monosyllables, and have restructured the pronominal paradigm accordingly. But in the few modern languages that do still show monosyllables – Waga and one or two others such as Gabi and Banjalang – *ŋay* and sometimes *ŋin* are preserved. (Warrgamay has a few monosyllabic words, but they all involve long vowels.)

The first syllable of the 2 sg pronoun varies between *ŋin*, *nyin* and *nyun*. We shall attempt to relate these together shortly. For the time being **ŋin* will be taken as representative of the original 2 sg form.

Our hypothesis is, then, that the sg roots were **ŋay* and **ŋin*, and that these were used without suffixation in S function. Ergative *-du* (with assimilation) and accusative *-NHa* marked A and O functions respectively; the genitive suffix would also have been added to **ŋay* and **ŋin*. We are positing:

ORIGINAL PRONOUN PARADIGM

	S	A	O	genitive
1 sg	*ŋay*	*ŋay+DHu*	*ŋay+NHa*	*ŋay*+GEN
2 sg	*ŋin*	*ŋin+du*	*ŋin+NHa*	*ŋin*+GEN
1 du	*ŋali*		*ŋali+NHa*	*ŋali*+GEN

. . . and so on, for the other n-sg pronouns

It is likely that the original genitive was *-gu*, which also marked dative and purposive, as with nominals. Waga continues to work in terms of monosyllabic roots but has introduced a new genitive and applies it directly to the root. The original genitive *ŋaygu* is preserved in Warrgamay, although that language could no longer be said to work in terms of a monosyllabic root. But the Warrgamay 2 sg genitive *ŋinu*, where **ŋingu* would be expected, is a difficulty. Note, though, the genitive *ŋingu* is found in Kungkari, from southern Queensland (and *dative *nyingu* is attested in Ngarluma and related languages from Western Australia). We cannot be certain of the original form of pronominal genitive in the way that we are concerning nominal case reconstruction (10.3) and pronominal accusative *-NHa* (11.1.3), for instance.

The ergative allomorph *-DHu* (an assimilated form of underlying *-du*) was conditioned by the final segment of **ŋay*. But the *y* has dropped, giving *ŋaDHu* (there is scarcely any trace of *ŋayDHu* in modern languages). This was probably due to a phonological restriction. In those modern languages (in the east) where *y* can occur at the end of a syllable, it cannot, in most cases, be followed by a laminal stop or nasal. (Warrgamay is unusual in permitting sequences of *-yny-* and *-yj-*; these are probably a recent innovation in the language.) There is, however, strong evidence from pronominal and also verbal reconstruction that pA did have syllables ending in *y*.

We are suggesting that sg pronouns showed both ergative inflection (like nouns) and accusative inflection (like n-sg pronouns), as in modern Warrgamay. There is no evidence that *ŋali* and the other non-singulars had a separate ergative form in an ancestor language. If they had, we should expect to find one or two conservative modern languages with *ŋali* for S but *ŋali+lu* or *ŋali+ŋgu* for A function, together with direct reflexes of sg forms A *ŋaDHu*, S *ŋay* etc. No modern language has a system of this type. In those few modern languages (of which we have quoted two, Dhalandji and Warlpiri) that do have ergative inflection on n-sg pronouns, this is plainly a recent extension of nominal case marking, with *-lu*~*-ŋgu* being added to ALL pronominal roots i.e. A *ŋali+lu*, S *ŋali* and 2 sg A *nyinda+lu*, S *nyinda* etc.

At a certain stage in the historical development of most Australian languages, monosyllabic roots and words ceased to be used. This would have led to the augmentation or replacement of **ŋay* and **ŋin*. There were two obvious possibilities here:

EITHER [a] Generalise the sg A form also to cover S function, giving sg pronouns a nominative–accusative paradigm, exactly like non-singulars.

ŋaDHu would now cover A and S functions, as it does in the majority of modern languages. We thus suggest the following development:

$$\begin{array}{lccc} & \text{S} & \text{A} & \text{O} \\ \text{from original:} & \multicolumn{2}{c}{\underbrace{\textit{ŋay}\quad \textit{ŋaDHu}}} & \textit{ŋaNHa} \\ \text{to:} & \multicolumn{2}{c}{\textit{ŋaDHu}} & \textit{ŋaNHa} \end{array}$$

We have already referred to Hale's hypothesis, suggested partly by Australian examples, that there is a preference for underlying forms to show only patterns that occur in surface forms, and that in the acquisition of language there is a tendency for words to be reanalysed in such a way that underlying roots will conform to surface patterns (7.2.1, 6.6.2). We would expect that, if no pronounceable word were of less than two syllables, then the tendency would be – as the language is learned by each succeeding generation – to eliminate monosyllabic roots. It is likely that, after the dropping of *ŋay* and generalisation of *ŋaDHu* to cover S as well as A function, *ŋaDHu* and *ŋaNHa* would no longer be recognised to have a common root, but would simply be two distinct 1 sg forms, not related by any morphological rule. There would be analogic pressure to replace *ŋaNHa* by *ŋaDHu*+*NHa*, involving the addition of accusative -*NHa* to root *ŋaDHu*, which fills S and A functions; this would make 1 sg exactly parallel to 1 du *ŋali*, and so on.

This pattern of development would perfectly explain the modern Western Desert system:

$$\begin{array}{lccccc} & \multicolumn{3}{c}{\text{1 sg}} & \multicolumn{2}{c}{\text{1 du}} \\ & \text{S} & \text{A} & \text{O} & \text{SA} & \text{O} \\ \text{original} & \multicolumn{2}{c}{\underbrace{\textit{ŋay}\quad \textit{ŋay+DHu}}} & \textit{ŋay+NHa} & \textit{ŋali} & \textit{ŋali+NH} \\ \text{intermediate stage} & \multicolumn{2}{c}{\textit{ŋaDHu}} & ,, & ,, & ,, \\ \text{modern Western Desert} & \multicolumn{2}{c}{\textit{ŋayu}} & \textit{ŋayu+NHa} & ,, & ,, \end{array}$$

There can be variants on this pattern. In Yidiny accusative -*nya* has, by a regular change, reduced to -*Vny* on *ŋali* giving O form *ŋaliiny*. The 1 sg SA form is *ŋayu* (a reduction from *ŋaju*, which is the basis for dative, purposive and other oblique forms) but 1 sg O is *ŋanyany* with -*ny* having been added to the original *ŋanya*, in order that 1 sg – like all other pronouns – should have an accusative ending in -*ny*. This *ŋanyany* effectively has two reflexes of accusative -*nya*; a considerable time must have elapsed between the formation of *ŋanya* (< **ŋay*+*NHa*), followed by the elimination of monosyllables with consequent loss of feeling that *ŋanya* was bimorphemic, and the final late addition of -*ny*.

OR [b] An alternative way of dealing with the proscription on monosyllables, but still maintaining distinct S and A forms of sg pronouns, would be to augment *ŋay* and *ŋin* so that they become disyllabic. The simplest way might be thought to be simply the addition of *-a*; this does appear to have happened in a few languages (e.g. 1 sg in Gumbaynggir).

We mentioned in 7.3.1 that some Australian languages have a requirement that all words should end in a vowel, and that *-ba* has been added to originally consonant-final words or roots to achieve this target. The same device appears to have been used to form disyllabic S forms of sg pronouns, in modern languages like Warrgamay. Waga permits monosyllabic words (without a long vowel) and preserves exactly the S, A and O proto-forms of 1 sg and 2 sg pronouns (although it has innovated heavily in genitives and in n-sg forms). Warrgamay does not allow monosyllables like *ŋay* and *ŋin*; it has instead *ŋayba* and *ŋinba*. This *-ba* is not, even historically, to be regarded as a semantic morpheme marking S function; it was instead probably a dummy syllable added in order to achieve a disyllabic word.

An original root **ŋay* appears to underlie the 1 sg pronoun in almost every Australian language, from both non-prefixing and prefixing regions. The 2 sg forms, on the other hand, show much more variation. There are *ŋindu/a* and also *nyundu/a*, *nyindu/a* and their derivatives *yundu/a*, *yindu/a* (the alternation *u~a* of the final vowel will be discussed shortly). There is enough variation here for us to be wary of trying too hard to relate them all to a single proto-form. It will be useful to look at the phonological correspondences involved, in terms of the discussion of chapter 6, to see if these can assist.

Consider first forms with an initial laminal nasal. Both **nyundu>nyindu* and **nyindu>nyundu* are possible and plausible; the former would involve progressive assimilation of the first *u* to the preceding laminal nasal, and the latter regressive assimilation of the *i* to *u* in the second syllable. Let us for the moment represent the first vowel as *V*. Can we now find a criterion that will help decide whether *V* was originally *u* or *i*?

Examination of cognates in double-laminal and double-apical languages indicates reconstruction as *NYVNDu* (in terms of the symbols used in 6.5.1, 6.5.2). That is, the initial nasal is always lamino-palatal *ny* wherever there is a laminal contrast, and the medial cluster is always apico-alveolar *-nd-* in languages with an apical contrast. If *V* were *u* this would give a form contrary to all the patterns described in 6.5 – laminal *NH*, not *NY* would be expected before *u* and apical *RNRD*, not *ND*, after *u*. However, if *V* were *i* the form *NYiNDu* exactly fits the general phonological pattern – *NY* occurs before *i*, and *ND* after *i* or *a*.

There is thus phonological evidence that *NYiNDu* should be the older form, with *NYuNDu* being derived from it by regressive vowel assimilation. *NYiNDu* is close to the third form *ŋiNDu* which occurs predominantly along the east coast, in languages that show archaic pronoun patterns. This suggests proto-form *ŋiNDu*, with assimilation of the initial nasal to the following vowel producing *NYiNDu*, and then vowel assimilation yielding *NYuNDu*. (In 11.2 we posit a comparable assimilation rule **NHu > ŋu* for 3 sg forms.)

Now we have hypothesised that *ŋiN + Du* was derived from a monosyllabic root **ŋin* by the regular ergative affix *-Du*; the monosyllabic form is still in use in Waga and a handful of nearby languages. If our hypothesis were true we should NOT expect to find any monosyllabic form *nyun*; change of *i* to *u* should only be possible in terms of disyllabic *nyindu*. In fact there is no monosyllabic pronoun *nyun*, in any language. (*nyin* is not known either, but we do get 2 sg SO *nyini* in Kalkatungu, along with 1 sg SO *ŋayi*, and 2 sg S form *yini* in Diyari and Wangkumara.)

Summarising, we have suggested proto-roots for sg pronouns:

1 sg **ŋay*, giving rise to *ŋaDHu* (with lenited form *ŋayu*);
2 sg **ŋin > NYin*, giving rise to *ŋiNDu* and *NYiNDu*, the latter yielding *NYuNDu* (the last two having lenited forms *yiNDu* and *yuNDu*).

It will now be seen that 2 du **NHu(m)baLV*, and its many variant reflexes, could not be related to the 2 sg root, either through dual *-bula* or by any other means. The initial segment of 2 du (as of 2 pl *NHurra*) is always *NH* and that of 2 sg is, if a laminal, always *NY*. At the time of emergence of two laminal series the vowel in the first syllable of 2 du and 2 pl must have been *u* but in 2 sg was *i*. There is strong evidence that the partial similarity between 2 du **NHu(m)baLV* and 2 sg **NYin* is purely coincidental.

The final problem, which has been glossed over until now, concerns the occurrence of *a* rather than *u* in sg pronouns *ŋaDHa*, *ŋiNDa*/*NYiNDa*/*NYuNDa* for a number of languages. We saw in 11.1.1 that

Warrgamay and Dhalandji, at opposite ends of the continent, show *a* while the intervening Western Desert and Warlpiri preserve an original *u*. The sg pronouns always agree in final vowel – either both have *u* or both *a*.

It seems that over certain parts of the continent final *u* has simply changed to *a* in the A or AS form of sg pronouns; a marked vowel has been replaced by the unmarked vowel at the end of these words. There is a similar type of change in verbs. A past tense inflection *-*NHu* can be recognised through verbal reconstruction; this retains a final *u* in many modern languages but has the form -*NHa* in others (12.1). The *u*/*a* isogloss for past tense ALMOST coincides with the *u*/*a* isogloss for sg pronouns. That is, most languages have singular pronominal forms and the reflex of pA past tense *-*NHu* both ending in *u*, or they have them both ending in *a*; Garadyari and Yidiny are of the first type, and Nyawaygi and Dhalandji of the second. (The isoglosses do not always QUITE coincide – Warrgamay and Dyirbal lie between Yidiny and Nyawaygi and show an intermediate type, with *a*-final sg pronouns but a *u*-final reflex of *-*NHu*.) The change of *u* to *a* in pronouns probably took place independently in at least one eastern and one western language, but has now diffused, to cover all the languages in certain geographical blocks; this change, and its diffusion, has been roughly paralleled by *u*>*a* in past tense.

The *u* in *ŋaDHu* and *ŋiNDu* originated from an ergative inflection. It is surely relevant to enquire why, if *u* changed to *a* in these pronouns, the same change did not apply to the ergative inflection on nominals in the relevant languages. There is a simple explanation here. We remarked in chapter 10 that ergative and locative inflections are generally distinguished only by final vowel – -*u* for ergative against -*a* for locative. A change *u*>*a* affecting nominal cases would entail ergative falling together with locative, with serious consequences for the grammar. Pronouns do not generally show local inflections, and so this constraint would not apply to them. (In addition, *ŋaDHu* and *ŋiNDu* are no longer felt to be inflected forms in most modern languages, but are rather seen as roots to which inflectional suffixes may be added.)

The 1 sg forms *ŋaya* that appear in some modern languages can have two different paths of development. Gumbaynggir S form *ŋaya*, contrasting with A form *ŋaaja*, probably just involved an augment -*a* added to the original S form **ŋay*. But instances of *ŋaya* in other languages descend from an original A pronoun **ŋaju* through change *u*>*a*, and lenition *j*>*y*. There is compelling evidence that all instances of *ŋayu* do relate to an earlier *ŋaju*. In Yidiny, for instance, all oblique 1 sg forms, except accusative, are based on *ŋaju-*, but the SA form itself – the most frequently occurring 1 sg form – has reduced to *ŋayu*. (In Yidiny's close genetic neighbour Jabugay the changes have gone one step further, with SA *ŋawu*, and *ŋaya-* ~ *ŋayi-* in oblique forms; Jabugay shows many examples of lenition, *b*>*w*, *g*>*w*, *j*>*y*, *d*>*rr* and – as here – assimilations *y*>*w*/-*u*.) Western Desert is closely genetically related to languages with *ŋaju*, suggesting that its 1 sg root *ŋayu* came from *ŋaju*, through *j*>*y*. These examples provide strong support for the suggestion that in Warungu, where a change **ny*>*y* has applied to the first segment of all second person forms (11.1.2), a change *j*>*y* is probably responsible for the 1 sg SA form *ŋaya* (which parallels 2 sg SA form *yinda*).

11.1.5 *Development of pronoun systems*

Our reconstruction of the pronoun paradigm for proto-Australian is summarised on page 340. There has been a wide variety of augmentations, generalisations and restructurings in the development of modern languages. Generally, eastern languages show relatively few changes – and have been the main source for our reconstruction of the original singular forms – whereas western languages demonstrate rather radical restructuring. (Although there are some semi-archaic pronoun systems in the extreme south-west, and in some languages from the Pilbara region.)

There can be many kinds of reasons for the realignment of pronouns, including (i) the need to replace or augment monosyllabic forms when phonotactic patterns of the language no longer permit monosyllables; (ii) taking an originally bimorphemic disyllabic form as the new unanalysable root, and basing all other forms on it; (iii) analogising the nominative–accusative pattern of n-sg pronouns onto singulars, or, more rarely (Waga is one of the few examples) analogising the pattern of distinct forms for all of S, A and O from singulars to non-singulars; (iv) analogising the absolutive–ergative inflection of nominals onto free-form pronouns; (v) forming new, transparent, n-sg pronouns by adding dual and plural suffixes (that perhaps already applied to nominals) to sg forms; (vi) tabooing of a pronoun due to death of a person whose proper name was phonologically similar to it; (vii) shift of a 2 pl pronoun to take on sg reference, probably for reasons of politeness (along the lines of French *vous*).

We first illustrate grammatically motivated developments, from (i)–(v), and then look at changes that have social causes, (vi)–(vii). There is such a range of types of pronominal development, in the 200 modern languages, that only a sample can be mentioned here.

[1] AUGMENTATION OF MONOSYLLABLES. We have already described the addition of *-ba* to **ŋay* and **ŋin* to yield disyllabic forms in Warrgamay – these are now *ŋayba*, *ŋaja*, *ŋanya* and *ŋaygu*, all plainly historically based on **ŋay* (and similarly for 2 sg **ŋin*). But Warrgamay does not have any monosyllabic words with short vowels and monosyllabic pronominal roots are no longer recognised. Oblique forms are based on the disyllabic genitives – dative–purposive *ŋaygungu*, *ŋinungu*; locative–aversive *ŋaygunda*, *ŋinunda*; and so on.

[2] GENERALISATION OF SINGULAR A FORM TO S FUNCTION. The development of sg pronouns in Dhalandji was described in the last section. 1 sg A *ŋadha*(< **ŋaDHu*) was generalised to cover S function (replacing **ŋay*) and then other case forms were restructured (following the pattern of noun inflection) with *ŋadha* as root – accusative *ŋadha+nya* replaced *ŋanha*, and so on. This is typical of western languages, which generally have sg pronouns inflecting in exactly the same pattern as non-singulars.

The process of generalisation has not been taken so far in Dyirbal. Here *ŋaja*, *ŋinda* have replaced **ŋay*, **ŋin* in S function, but the sg genitives *ŋaygu*, *ŋinu* have been maintained and oblique forms, including accusative, are based on these, not on the SA forms. Sample sg and n-sg inflections are:

DYIRBAL	SA	O	genitive	purposive-dative
1 sg	*ŋaja*	*ŋayguna*	*ŋaygu*	*ŋaygungu*
1 du	*ŋali*	*ŋalina*	*ŋaliŋu*	*ŋalingu*

In Gumbaynggir we see a mixture of [1] and [2] – 1 sg **ŋay* has been augmented to *ŋaya* in S function, preserving its distinctness from A *ŋaaja*, but in 2 sg the A form *ŋiinda* has been generalised to S function. Note that if *a* were added to 2 sg **ŋiin*, as it has been to 1 sg **ŋay*, the resulting form would be identical to O *ŋiina*; having S fall together with

A appears to have been preferred over neutralisation of S and O, in terms of the overall Gumbaynggir grammatical system.

[3] GENERALISATION OF ABSOLUTIVE–ERGATIVE PARADIGM FROM NOMINALS. In just one or two languages the monosyllabic S sg pronouns have been replaced not by A but by O forms, giving an absolutive–ergative paradigm on these pronouns just as on nouns. Thus in Kungkari we encounter:

KUNGKARI	S	A	O	genitive
1 sg	*ŋanha*	*ŋadhu*	*ŋanha*	*ŋayu*
2 sg	*yina*	*yindi*	*yina*	*ŋingu*

(The final vowel of *yindi* can be explained as assimilation of the high vowel *u* to *i* in the preceding syllable.)

Other languages plainly had a nominative–accusative pronoun paradigm at an early stage, but have more recently recast it into the nominal pattern. An intermediate stage towards this is evident in Western Desert. Here pronouns show accusative *-nya* and locative–dative *-la*, just like proper nouns. Suffix *-lu* marks A function on proper nouns; there would plainly be analogic pressure also to use *-lu* for A function of pronouns. But since pronouns in Western Desert all employ the same form for A and S functions, what has happened is that *-lu* has been adopted as part of the nominative (SA) form of singular pronouns in some dialects.

Warlpiri has taken this tendency one step further – all free-form pronouns inflect like nominals. The SA forms *ŋaju* etc. have simply been reinterpreted as the nominal-like roots, and are now used in absolutive case (with zero realisation) for S and O functions. There is no trace of the original accusative *-nya*, except perhaps as the first element of genitive *-nyaŋu*; it is possible that at some stage of development genitive was formed by the addition of *-ŋu* to the accusative (although this is only one of several possible explanations). Singular pronouns in Warlpiri show *-lu* between roots *ŋatju*, *nyuntu* and the productive nominal ergative (onto trisyllabic stems) *-rlu*. It is likely that this has a similar origin to *-lu* on sg pronouns in Western Desert. The *-lu* would reflect the original ergative form in Warlpiri (as in most languages); only very recently has this shifted to *-rlu* (the retroflex here probably being conditioned by a following *u* – cf. 6.5).

The probable shift in pronominal patterning for Warlpiri can be summarised for the 1 sg pronoun:

WARLPIRI	S	A	O	genitive	dative
proto-system	*ŋay*	*ŋay+DHu*	*ŋay*+NHa	*ŋay* + GEN	*ŋay* + DAT
intermediate system	*ŋaju(lu)*		*ŋajunya*	*ŋajunyaŋu*	*ŋajugu*
modern system	*ŋaju(lu)*	*ŋajulurlu*	*ŋaju(lu)*	,,	,,

ŋaju was originally the A form. It was then generalised also to cover S function. Later, *ŋaju* was taken as the root and used in S and O function, with A involving an ergative increment. The present A 1 sg form *ŋajulurlu* is historically **ŋay + DHu + lu + rlu*, involving three distinct reflexes of ergative *-*lu* ~ -*du*; these would have been incorporated into the word at periods separated by considerable time differences.

[4] RE-FORMATION OF NON-SINGULAR PRONOUNS ON BASIS OF SINGULAR FORMS. In a few scattered languages the regular n-sg forms (*ŋali*, *ŋana*, and so on) have been replaced by new formations involving dual and plural suffixes added to the singular roots. This has sometimes taken place only in the second person, as in the Ngarluma system given in 11.1.2 and also in Ngiyambaa from central New South Wales. Ngiyambaa has four basic pronouns – 1 sg *ŋadhu*, 1 du incl *ŋalii*, 1 pl incl *ŋiyani* and 2 sg *ŋindu*. Non-singulars are formed from 2 sg (and also from 3 sg for bound forms) by the addition of dual -*bulaa* and plural -*gal*. (Ngiyambaa also forms exclusives by the addition of -*naN* to 1 du incl and 1 pl incl. There is further discussion of Ngiyambaa pronouns in 11.3.)

Dhurga, from the south coast of New South Wales, bases all its pronouns on 1 sg *ŋaya* and 2 sg *nyindi* by appropriate dual, plural (and exclusive) suffixes. There is no trace at all of *ŋali* or the other n-sg forms that recur so regularly in other languages.

[5] SHIFT FROM 2 pl TO 2 sg. There are a number of communities in Australia where the 2 n-sg pronoun must be used in addressing a single person who is in a certain relationship. At Yirrkala, the Yolŋu 2 n-sg pronoun *nhuma* should be used to address a particular 'avoidance' category of kin (for a woman, her brother's mother-in-law, for instance). Mary Laughren reports that a Warlpiri 'man may use the singular [forms of pronouns] when addressing his wife or close brothers' wives, his mother, grandmother or similar close blood female relation, but must use the plural when addressing other women or referring to them'; this applies to first and third person, as well as second person,

pronouns. The Yirrkala situation, in particular, is reminiscent of conditions on the use of *tu* and *vous* in French, making allowances for the different social structures of European and Australian societies.

In some European languages the convention that plural second person pronoun is the polite form of reference for a single addressee has led to the original singular form dropping out of use (as in English, where *you* has entirely taken over from *thou*). In at least two parts of Australia an original 2 n-sg pronoun has taken on 2 sg reference, probably as a natural outcome of sociolinguistic conventions like those at Yirrkala. One difference from English is that Australian languages always maintain a singular/plural distinction, usually by forming a new plural through the addition of some productive suffix.

Compare the second person forms in a sample of Western Desert dialects:

Pitjantjatjara dialect	2 sg *nyuntu*	2 pl *nyurra*
Nyangatjatjara dialect	*nyurra*	*nyurramuka*
Ngaanyatjara dialect	*nyuntulu*	*nyuntuluya*

A similar situation is encountered in Yidiny and Jabugay, two closely related languages from north-east Queensland:

Yidiny	2 sg *nyundu*	2 n-sg *nyunduba*
Jabugay	*nyurra*	*nyurramba*

There is strong evidence that proto-Yidiny–Jabugay had 2 sg *nyundu* and 2 pl *nyurra* as did proto-Western-Desert. The 2 pl form has been replaced in Yidiny by a new form founded on 2 sg and involving the productive nominal derivational suffix *-ba* 'one of a group' (see 10.4). Jabugay has replaced 2 sg by the old 2 pl form and derived a new 2 pl by the same suffix.

[6] TABOOING OF PRONOUNS. The taboo on the name of a dead person and on any vocabulary item which is phonologically similar can, on occasion, extend to pronouns. In 2.1 we mentioned the replacement of 1 sg *ŋayu* in some Western Desert dialects by *ŋanku*, borrowed from the avoidance style. Grammatical forms that are proscribed in this way will often return to use after a time – as has happened with *ŋayu* – but this need not always happen.

In the absence of historical records we can only guess at cases where tabooing may have been a factor in pronominal reanalysis and restructuring. It could be the cause of the suppletive 1 sg genitive–dative–purposive *jurdi* in Dhalandji (table 11.2) for instance. Whether or not tabooing was a factor here (and we have no way of finding out), it is certainly the case that sporadic tabooing will have been a factor in the development and reorientation of pronominal systems in a number of Australian languages.

11.1.6 *Minimal/augmented pronoun systems*

Our discussion thus far has been confined to singular/dual/plural systems in non-prefixing languages. Prefixing languages, from the central north, show a few points of similarity in their free-form pronouns. The most striking similarity concerns 1 sg – it is *ŋayi* in Murinypata, *ŋayu* in Bardi, *ŋaye* in Gunwinygu, *ŋabi* in Maung, *ŋayug* in Ngaliwuru, *ŋaayapa* in Gunibidji, *ŋiya* in Tiwi, and so on. The 2 sg roots show less relation to forms in non-prefixing languages – *nyinyi* in Murinypata, *ju* in Bardi, *ŋurda* in Gunwinygu, *nuyi* in Maung, *nami* in Ngaliwuru, *nyinyjapa* in Gunibidji, and *ŋinhtha* in Tiwi; only the first and the last two of these are at all close to **ŋin*>*nyin*. There are almost no similarities between n-sg free-form pronouns in prefixing and non-prefixing languages; we find such 1 du incl forms as Murinypata *ne-*, with the closest approximation to *ŋali* being Gunibidji 1 du incl *ŋaarapa* and Maung 1 n-sg incl *ŋarrurrwi*!

Many of the prefixing languages appear at first glimpse to have asymmetrical pronominal systems. Although they CAN be described in terms of a singular/dual/plural semantic pattern this produces an uneven-looking matrix. Consider the Rembarrnga pronouns, quoted in dative form in table 11.3.

Table 11.3. *Rembarrnga dative pronoun forms, arranged by traditional categories*

	sg	dual	trial	plural
1 incl	—	*yəkkə*	*ŋakorrpparraʔ*	*ŋakorrə*
1 excl	*ŋənə*	*yarrpparraʔ*	*yarrə*	
2	*kə*	*nakorrpparraʔ*	*nakorrə*	
3 masc	*nawə*	*parrpparraʔ*	*parrə*	
fem	*ŋatə*			

First person inclusive (including one or more addressees, in addition to speaker) appears to make a distinction between trial and plural (here referring to four or more participants), which is neutralised in the other rows. There is of course a gap in 1 sg incl. Looking at forms, we see that all duals are marked by *-pparraʔ* excepting 1 incl, but that *-pparraʔ* does occur in 1 incl TRIAL.

Graham McKay has suggested that it would be more appropriate to describe this system in terms of four 'minimal' categories – 'I', 'you', 'you and I' and 'he/she'. If we use '±speaker' to indicate involvement or not of the speaker, and '±addressee' for involvement or not of the addressee, the minimal categories are:

1	[+speaker, −addressee]	'I'
1/2	[+speaker, +addressee]	'you and I'
2	[−speaker, +addressee]	'you'
3	[−speaker, −addressee]	'he/she'

The pronouns from table 11.3 can now be rearranged as in table 11.4. We replace singular, dual, trial and plural by 'minimal', 'augmented' and 'unit augmented'. 'Minimal' indicates reference to just 'I', 'you and I', 'you' or 'he/she'. If one other is added to any of these groups a 'unit augmented' form is employed, and if more than one other person is involved then a form from the 'augmented' column will be appropriate. It will be seen that unit augmented forms are regularly derived from augmented through replacement of the final *-ə* by *-pparraʔ*.

Table 11.4. *Rembarrnga dative pronouns, arranged by minimal/augmented categories*

	minimal	unit augmented	augmented
1	*ŋənə*	*yarrpparraʔ*	*yarrə*
1/2	*yəkkə*	*ŋakorrparraʔ*	*ŋakorrə*
2	*kə*	*nakorrparraʔ*	*nakorrə*
3 masc	*nawə*	*parrpparraʔ*	*parrə*
fem	*ŋatə*		

Minimal/augmented pronominal systems are shown by a number of prefixing languages – Bardi and Nyigina from West Kimberley, Malak-

Malak from Daly River, Alawa from Roper River, Nunggubuyu from Rose River, Burarra from Central Arnhem Land, and Tiwi from Bathurst and Melville Islands, as well as Rembarrnga and other languages of the Gunwinygu subgroup. Intervening languages, within the prefixing area, do not show this pattern, having instead a regular sg/du/pl system.

All the pronoun systems in non-prefixing languages which we surveyed in 11.1.1–5 work in terms of singular and plural, usually with the addition of dual. Now in many language families, outside Australia, sg/du/pl systems are known to have developed out of sg/pl systems. 'Dual' is added as a third, marked term to a two-term number system; and it may, at a later stage, be dropped, yielding again a two-term system.

The puzzling property of the pronominal system we reconstructed is that the 1 du form *ŋali* occurs in more languages than 2 pl *NHurra* or 1 pl *ŋana*, and that both of these are commoner than 2 du *NHu(m)baLV*. If pA had just two numbers – singular and plural – we would expect 1 pl and 2 pl forms to recur more than 1 du. If pA did also have duals, why does *ŋali* occur in so many more languages than *NHu(m)baLV*?

One possibility is that pA had three basic first and second person forms:

MINIMAL	1 **ŋay*	1/2 **ŋali*	2 **ŋin*

and that there were then established augmented correspondents:

AUGMENTED	1 **ŋana-*	1/2 **ŋaNH-*(??)	2 **NHurra*

On this hypothesis, pA pronouns would have had a minimal/augmented semantic organisation, like Rembarrnga, rather than a sg/pl(/du) system, like almost all modern non-prefixing languages.

This hypothesis does explain the fact that, in modern languages with an incl/excl distinction, *ŋali* is always 1 du INCLUSIVE; we are suggesting that it originally referred to 'you and I'. And also the fact that *ŋana-* is almost always 1 pl EXCLUSIVE in modern languages which show the distinction.

Some modern languages have reinterpreted the minimal/augmented system in terms of a regular number system. The central role of *ŋali* virtually demands that a sg/du/pl system be established with *ŋali* being adopted as 1 du, now referring to 'he/she and I' as well as to 'you and I'.

A new 2 du has to be formed – *NHu(m)baLV* occurs in some languages (maybe emanating from just one branch of the family) but in others it simply involves a dual affix to 2 sg. The 1 pl form will usually be *ŋana*, the original 1 augmented. Warrgamay and Western Desert are typical examples, both having *ŋana-* as 1 pl. (As discussed in 11.1.2 there is much variation between languages as regards 1 pl incl forms, although *ŋaNHu-* and *ŋaNHDHa-* occur in a number of languages.) It is interesting to note that in Banjalang, one of the few modern languages that lacks a dual and has just two numbers in its pronoun system, *ŋali* functions as 1 n-sg.

Yidiny has a dual form in 1 but not in 2; its close genetic relative Jabugay lacks duals altogether. It might be suggested that proto-Yidiny–Jabugay had regular duals, and that these have gradually been eliminated (the 1 du form in Yidiny is in fact used quite rarely). But the Yidiny system could be restructuring of an original minimal/augmented paradigm without the introduction of any new form for 2 du:

YIDINY	1	2
sg	*ŋayu*	*nyundu*
du	*ŋali*	–
n-sg	*ŋanyji*	*nyunduba*

Whereas *ŋali* would originally have referred just to 'you and I' it is now also used for 'he/she and I'. Proto-Yidiny–Jabugay could have had precisely the modern Yidiny system (with **nyurra* for the 2 n-sg form – see discussion of this point under [5] in 11.1.5), with modern Jabugay having just dropped *ŋali*.

Other modern languages have reinterpreted the original minimal/augmented system in terms of sg, du and pl PLUS an incl/excl distinction. 1 du incl will naturally be covered by *ŋali* but a new form is needed for 1 du excl; this is most often derived from *ŋali*. 1 pl incl and 1 pl excl will naturally be covered by the old 1/2 augmented and 1 augmented forms respectively. Typical examples are the system in Dhalandji, and that in Ngarla:

NGARLA	1		2
sg	*ŋaya*		*nyinba*
	incl	excl	
du	*ŋali*	*ŋaliya*	*nyumbalu*
pl	*ŋanyjarra*	*ŋanarna*	*nyurra*

Our hypothesis accords well with the system in Ngiyambaa, which has 1 sg *ŋadhu,* 1 du incl *ŋalii* and 1 pl incl *ŋiyani* but only 2 sg *ŋindu.* 2 du – and also 2 pl – involve suffixes to 2 sg (and 1 du/pl excl involve a suffix to 1 du/pl incl). We described above how in Dhurga du and pl are based on sg forms for both numbers. It is not necessary to suppose that, say, the new 2 du *nyindiwu* and 2 pl *nyindiwan* replaced previous forms with exactly this reference. It may be that Dhurga simply took 1 sg *ŋaya* and 2 sg *nyindi,* two of the minimal forms in an original minimal/augmented system, and built a new sg/du/pl paradigm on them, without any necessary intervening stages.

Our hypothesis concerning a minimal/augmented pronominal system for pA is admittedly rather speculative. The reconstruction of forms in 11.1.1–5 is far more certain, and stands quite independently of the plausibility of the minimal/augmented hypothesis. We have mentioned before the likelihood that prefixing languages previously had free-form pronouns more like those of modern non-prefixing languages in form; these have reduced to become bound prefixes to verbs, and new free forms have evolved in rather different ways in the different languages. We have effectively suggested that the prefixing languages, although innovative in many other ways, have retained the original pA semantic system for pronouns.

What would make our hypothesis more plausible would be a language from the non-prefixing area – with the same sort of free-form pronouns as Warrgamay, Dhalandji, Western Desert, Warlpiri, and so on – which had a minimal/augmented system. There are, in fact, examples of this type, from far North Queensland.

Umpila is spoken in the central part of the Cape York Peninsula, between the two initial-dropping areas (map 6). G. N. O'Grady has set out Umpila pronouns as:

UMPILA	sg	du	pl
1 incl	–	*ŋali*	*ŋambula*
1 excl	*ŋayu*	*ŋana(baʔamu)*	*ŋana*
2	*ŋanu* ~ *ŋunu*	*ŋuʔula(baʔamu)*	*ŋuʔula*
3	*nhulu*	*bula(baʔamu)*	*bula*

They are surely more revealingly described as:

	minimal	augmented
1	*ŋayu*	*ŋana*
1/2	*ŋali*	*ŋambula*

	minimal	augmented
2	*ŋanu*~*ŋunu*	*ŋuʔula*
3	*nhulu*	*bula*

with the further specification that -*baʔamu* can optionally be added to augmented forms to indicate unit augmentation. (It would be interesting to check whether -*baʔamu* could also be added to *ŋambula*.)

The 2 minimal form in Umpila is somewhat unusual; *ŋunu* could conceivably relate to **ŋin* but further examples of the conditioned change involved (*i*>*u* – by assimilation to the preceding peripheral nasal?, or to the *u* in the following syllable?) would be required before this cognation could be accepted. *ŋuʔula* derives from **ŋubula* by a regular change; *bula* is plainly the pA stem 'two'.

Uradhi an initial-dropping language spoken just to the north of Umpila also shows a minimal/augmented system with minimal forms 1 *ayu*, 1/2 *ali*, 2 *andu* (presumably from **ŋayu*, **ŋali*, **nyuntu*, respectively) etc. In addition, Mary Laughren has suggested that the system of bound pronominal clitics in Warlpiri is organised on a minimal/augmented basis. Our hypothesis remains speculative, but there is enough supporting evidence to make it worthy of serious consideration.

11.2 Third person pronouns

Australian languages generally do have dual and plural third person pronouns, following the pattern of first and second persons. The following forms occur widely in non-prefixing languages:

3 du *bula* 3 pl *DHaNa*

3 pl *jana* occurs in single-laminal languages such as Warrgamay and Western Desert, and *dhana* in double-laminal languages such as Dhalandji and Guugu Yimidhirr. The Kalkatungu 3 pl *dhina* has assimilated *a* in the first syllable to the preceding laminal. 3 du has the form *bula* in single- and double-apical languages (see Notes to 6.5.2–3) – it occurs in Warrgamay and Guugu Yimidhirr from the east, Garawa on the Gulf, and Yinggarda from the far west, among many others; Warluwarra has 3 du *wula* with lenition of the first segment.

In many languages *bula* occurs as the number adjective 'two'. It is sometimes used to derive a dual from a singular pronoun – this happens for second and third person in Ngiyambaa, for instance (the affix here has the form -*bulaa*, with a final long vowel). Just occasionally -*bula* is found functioning as the SECOND person pronoun (e.g. Gabi has 2 du *bula* and Gumbaynggir 2 du *bulaa*).

It is not uncommon for Australian languages to have forms that can be recognised as 3 du and 3 pl pronouns but nothing that could properly be called 3 sg. Dyirbal, for instance, has 3 du *bulay* and 3 pl *jana* in its southernmost dialect; these normally have only human reference. It also has a set of determiners (9.2.1, 10.2) that fulfil some of the functions of 3 sg pronouns in other languages; however, they are not specified as to number and commonly occur WITH a noun in an NP (although they can also make up an NP by themselves). Determiners differ from 3 du and 3 pl pronouns in many ways. They have an initial element specifying the location/visibility of the referent – *yala-* 'here, near', *bala-* 'there, far' or *ŋala-* 'not visible; either audible or remembered'; this is followed by a case inflection and then a final element indicating noun (gender) class. Determiners inflect on an absolutive–ergative pattern, like nouns.

Many languages are like Dyirbal in having just a set of definite determiners – with obligatory specification of distance – in place of anything that could be called 'third person (singular)'. Sometimes there are also 3 du and 3 pl pronouns, as in Dyirbal, but a number of languages lack even these. In the Ngaanyatjara dialect of Western Desert, for instance, the deictic system is:

ngaa-	'this, here'
pala-	'that, mid-distant'
nyarra-	'that, far distant (yonder)'
palunya-	'that, not visible (e.g. person/thing previously referred to)'

Notice the identity between *pala-*, referring to the middle of the three locational choices in Western Desert, and *bala-*, indicating the further of the two choices, in Dyirbal. In most dialects of Western Desert the definite determiners inflect like proper nouns.

Most prefixing languages have third person pronouns that are similar in inflectional pattern and reference to first and second person forms. Perhaps rather less than half the non-prefixing languages are also of this type; the remainder employ distance-determined forms like Dyirbal and Western Desert.

There are a number of languages that fall between the 'third person like first and second person' type, on the one hand, and the 'no third person, in the strict sense' type, on the other. Demonstratives/third person pronouns may have different forms for all of S, A and O (see 9.7) and may have special semantic features. Warrgamay is a language of this kind. Table 11.5 gives its third person pronouns, together with an example of nominal inflection; first and second person pronouns were in table 11.1.

Table 11.5. *Third person pronouns in Warrgamay*

	S	A	O	genitive	purposive–dative
'3 sg'	*nyuŋa*	*nyulaŋga*	*nyuŋa*	*nyuŋaŋu*	*nyuŋangu*
3 du	*bula*	*bulaŋgu*	*bulanya*	*bulaŋu*	*bulangu*
3 pl	*jana*	*janaŋgu*	*jananya*	*janaŋu*	*janangu*
sample noun:					
bada 'dog'	*bada*	*badaŋgu*	*bada*	*badaŋu*	*badagu*

3 du and 3 pl are like nouns in taking regular ergative *-ŋgu*, but like pronouns in showing the accusative suffix *-nya* and in having purposive–dative *-gu* added to a stem which is derived from the root by an augment *-n*. 3 sg inflects exactly like a noun save that purposive–dative inflection is again added to an *n*-stem. And the 3 sg A form is *nyulaŋga* where *nyuŋaŋgu* would have been expected (we return to these forms below).

nyuŋa is semantically rather different from the other eight pronouns; it is probably not strictly appropriate to refer to it as 'third person singular'. *bula* and *jana* are, like first and second person pronouns, strictly specified as to number, and can only normally be used with human reference. In contrast, *nyuŋa* can refer to anything – human or non-human. Further, although its unmarked reference is to singular number it CAN be used for two or more things, or even for something uncountable. *nyuŋa* typically occurs in an NP with a noun, but it can also occur with any of the eight pronouns and has even been found co-occurring with *jana*:

(1) *nyuŋa* *jana* *nyugi+gi*
'3sg'+SO 3pl+S dance+PERF
'A lot of people danced.'

From a semantic point of view we could think of the personal pronouns (with human reference) as constituting a 3 × 3 matrix with a gap in the 3 sg box. *nyuŋa* is then a form outside this system, ranging over all numbers and all persons (but with an unmarked '3 sg' sense that does correspond to the empty box).

Although Warrgamay is not unique in the semantic complexity of its 'third person pronouns' there are a fair number of Australian languages that show a regular system of 3 sg/du/pl without any hidden complexities of this sort.

For many languages of Western Australia it appears that all numbers and persons of pronouns inflect on a straightforward nominative–accusative pattern. A common 3 sg form in this part of the continent – to go with 3 du *bula* and 3 pl *DHana* – is *ŋuNHa*. Thus Balyku has *ŋunha*, the single-laminal tongue Nyamal has *ŋunya*, and so on. (Ngarluma is unusual in that it has 'distance-referring' forms in sg, du and pl. The 'far-distance' morpheme *ŋunhu-* is probably cognate with simple 3 sg *ŋuNHa* in neighbouring languages.) Dhuwala/Dhuwal from Eastern Arnhem Land, has a 'remote' demonstrative *ŋunha*, with oblique stem *ŋuru-*.

The recurrent 3 sg form in eastern languages is *NHulu*. We find *nhulu* in Umpila and *nyulu* in Gugu-Yalanji, from North Queensland, *nyula* in Banjalang from New South Wales, and so on. It seems that where 1 sg and 2 sg have replaced final *u* by *a*, then the same change has affected *NHulu*, if it is in the system. Warungu, spoken immediately to the west of Dyirbal and Warrgamay, has 1 sg *ŋaya*, 2 sg *yinda* and 3 sg *nyula*, for instance. The most westerly occurrences of this 3 sg form are *nyulu* in Garawa (at the northern end of the Queensland/Northern Territory border) and *nhulu* in Diyari (from South Australia). In most languages *NHulu* is the sole 3 sg pronoun, referring to all types of human (and often non-human as well). But in the few languages that show a gender distinction *NHulu* is always the masculine form – this applies in Banjalang, where 3 sg feminine is *nyaangan*, and in Diyari, where 3 sg fem is formed on a root *nhan-*.

In quite a few eastern languages the paradigm of *NHulu* is irregular, almost reminiscent of the 1 sg and 2 sg forms in Warrgamay and Gumbaynggir. Consider Warungu, for instance:

WARUNGU	AS	O	genitive	dative–purposive
3 sg	*nyula*	*nyunya*	*nyuŋu*	*nyuŋungu*

This clearly suggests a monosyllabic root *nyu-*, to which are added ergative *-lu* for A function, accusative *-nya* for O function, and genitive

-ŋu. We would presume that the root *nyu* might at one time have occurred without inflection for S function.

It is in keeping with our inferences concerning pA phonotactics (6.6) and the earlier reconstruction of 1 sg **ŋay* and 2 sg **ŋin* to suggest an original 3 sg (masculine?) root *NHu*. Whereas 1 sg *ŋay* and 2 sg *ŋin* are found for S function in Waga, and one or two other languages, there is no trace of a 3 sg form *nyu* or *nhu* in any modern language. This is, however, scarcely surprising; where monosyllables (without long vowels) do occur in modern languages they are almost always closed syllables. An open monosyllable such as *NHu* would have been augmented or replaced earlier than *ŋay* and *ŋin*. (The 3 sg pronoun in Waga has *yoo* alternating with *yooru* in S function; this may conceivably be a reflex of **NHu*.) Comparison with 1 and 2 sg forms suggests that it MAY originally have occurred without any suffix, in S function; but in most modern languages which show *NHu-* pronouns, the A form *NHulu* has been extended also to cover S function.

3 sg A form *nyulaŋga* in Warrgamay may stem from the productive ergative suffix *-ŋgu* having been added to *nhula*, and then further operation of the change *u>a*. Warrgamay *nyuŋa* may well be related to **NHu*, although the nature of the relation is not at present clear.

Turning now to the western 3 sg form *ŋuNHa*, intensive search reveals one language with an irregular paradigm; in the others *ŋuNHa* functions as the root to which accusative, genitive, dative etc. suffixes are added – just like 1 sg *ŋaju*, 1 du *ŋali*, and so on. Thargari is unusual in that pronouns, like nominals, inflect on an absolutive–ergative pattern. Third person forms (perhaps better described as 'demonstratives') carry an obligatory specification of distance. The 'remote' form has inflection:

THARGARI	S	O	A	genitive–dative
'remote' demonstrative	*ŋunha*	*ŋunhanha*	*ŋudu*	*ŋurnu*

Remembering that there has been a regular phonological change **l>ḍ* in Thargari (1 du incl is *ŋaḍi*, for instance) we can plausibly recognise a root *ŋu-* here, to which have been added accusative *-nha*, ergative *-lu* (*>ḍu*) and a genitive–dative *-rnu*. It is likely that the original O form *ŋunha* was first generalised also to cover S function, perhaps replacing an original monosyllabic S form *ŋu*. By this stage there would have been no monosyllabic words in the language, and speakers would have regarded *ŋunha* as an unanalysable form. The final change was for the productive accusative suffix *-nha* to be added to *ŋunha* to mark O function (accusative *-nha* occurs with almost all noun phrase constituents in Thargari).

At first sight there seemed to be little chance of connection between the common eastern 3 sg form *NHulu* and the recurrent western form *ŋuNHa*. But then we saw that Warungu shows both *nyula* (<**nyulu*) and *nyunya*, while Thargari has *ŋudu* (<**ŋulu*) and *ŋunha*. These can be described in terms of monosyllabic roots *nyu* and *ŋu*, together with the regular ergative *-lu* and accusative *-NHa* (exactly paralleling 1 sg and 2 sg).

It is natural now to enquire whether we could relate these monosyllabic roots. The change:

3 sg *NHu*>*ŋu*

is clearly plausible, involving assimilation of the initial nasal to the following peripheral vowel. Notice that this change exactly parallels:

2 sg *ŋin*>*NYin*

which we justified, on independent grounds, in 11.1.4. A single rule will describe the two changes: 'an initial nasal takes on the place of articulation of the following vowel', in terms of our placement of *u* in the peripheral and *i* in the laminal series, in 6.8 (with the further specification that it is the peripheral nasal *ŋ*, and not *m*, which occurs before *u*).

Note also that what we are putting forward as the original 2 sg form, *ŋin*, occurs today only in the east; western languages have *nyin*+*du* or its derivative *nyun*+*du*. Similarly, 3 sg forms based on *NHu* are confined to eastern languages, while the derived form *ŋu* occurs mainly in the west.

For 1 sg and 2 sg most modern languages have taken the original A forms *ŋaDHu* and *ŋindu*~*NYindu*~*NYundu* as new disyllabic roots to which are added case inflections; but there are a few languages – like Kungkari, exemplified in 11.1.5 – that have generalised the original O forms *ŋaNHa* and *ŋina*~*NYina*. There is clear geographical demarcation for 3 sg – eastern languages have taken the A form *NHulu* to be basic, using it also for S function in most languages, while in the west the original O form *ŋuNHa* (<**NHuNHa*) has been adopted as 3 sg root and case inflections added to it.

There are far fewer languages with 3 sg forms based on *NHu*~*ŋu* than with 2 sg forms based on *ŋin* ~ *NYin*. But the correspondences, and irregular paradigms in Warungu (and other eastern languages) and Thargari, strongly suggest that pA had 3 sg *NHu*, along with 1 sg *ŋay* and 2 sg *ŋin*, and that these originally monosyllabic forms have all undergone the same sorts of augmentations, restructurings and phonological changes.

11.3 Bound pronouns

The majority of the languages of Australia have pronominal affixes that can be attached, typically, to the verb. A sentence may thus consist of a single word. We can illustrate from Western Desert:

(2) *pu+ngku+rna+nta*
hit+FUT+1sgSUBJ+2sgOBJ
'I will hit you.'

(3) *pu+ngku+rni+n*
hit+FUT+1sgOBJ+2sgSUBJ
'You will hit me.'

In languages of this type, free-form pronouns are used rather sparingly, for particular emphasis. Thus we could add *ngayulu* 'I' to (2) to emphasise that '*I* will hit you', or *nyuntunya* to show 'I will hit *you*' (or, conceivably, both); but free pronouns are NOT NEEDED here and would in fact seldom be included.

Free-form pronouns are distinct words; like other words, they may be quite freely permuted within a sentence and a speaker may pause before and after them. Forms such as *-rna*, *-nta*, *-rni* and *-n* in (2)–(3) are bound rather than free; they cannot be pronounced independently, but must be attached to some word and are phonologically part of it. In Western Desert they are normally attached to the first constituent in the sentence, whatever this is. They thus differ from derivational and inflectional affixes, which can generally be used with items from only one type of word class. It is most appropriate to describe these bound pronominals as 'clitics'; clitics do not phonologically cohere with the word to which they are attached in the way that derivational and inflectional affixes can (with assimilations, contractions and other morphophonological processes applying at a stem-affix boundary).

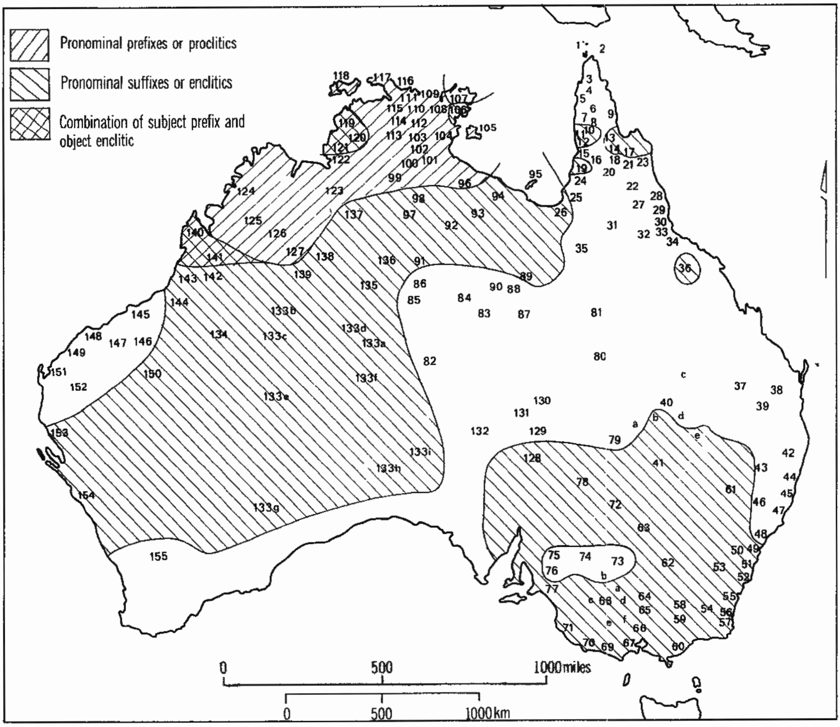
Pronominal clitics must occur in a fixed order; they differ from free-form pronouns which (like other words) can generally occur at any position in a sentence. In some languages clitic order is determined by syntactic function – subject clitic precedes object form etc. But clitics do generally have distinct forms for different functions, as in the Western Desert set (exemplifying just for singulars; there are also distinct duals and plurals for each column):

	S and A function	O function
1 sg	*-rna*	*-rni*
2 sg	*-n*	*-nta*
3 sg	*ϕ*	*-lu*

This makes it possible to employ some other principle of ordering. In Western Desert, as in many other Australian languages, ordering depends on person – first person will precede second person, and second will precede third person, quite irrespective of syntactic function. This is illustrated in (2)–(3).

It is clear that bound-form pronouns have developed from free forms (as discussed and reconstructed in the first part of this chapter) relatively recently, and that this process of evolution must have taken place independently in several different regions. Having begun in some language within a certain area this development then diffused to neighbouring tongues. It seems that, by virtue of its linguistic system, any Australian language has a propensity towards developing bound pronominal forms, but that this is further advanced in some languages than in others. (It will be remembered that the discussion of chapter 7 suggested that, by virtue of their phonological systems, Australian languages have an inherent propensity towards 'initial dropping'; this has – like the development of bound pronouns – happened in several quite distinct areas.)

Map 9 shows the regions in which bound pronominal clitics have developed. Generally, a sentence must contain one clitic indicating subject (A or S) and one indicating either object (O) or indirect object (dative–purposive NP). There are just a few languages – generally, on the fringe of a bound-pronoun area – that have only subject clitics e.g. Guwamu in southern Queensland and Nyamal in north Western Australia. In almost every instance pronominal clitics show the same semantic distinctions as free-form pronouns – that is, they have sg, du and pl forms in first, second and third persons, and show an incl/excl distinction in 1 du and 1 pl if free pronouns do. If there is a minimal/augmented system it will generally apply to both free and bound forms. Just a few, more restricted systems are encountered, again on the fringe


▨ Pronominal prefixes or proclitics
▧ Pronominal suffixes or enclitics
▩ Combination of subject prefix and object enclitic
0
500
1000 miles
0
500
1000 km

Map 9. Distribution of bound-form pronouns. Key as for map 2

of a bound-pronoun area. Thus both Darkinyung and Awabakal (T2 and U1 on map 7 in chapter 8), just north of Sydney, had bound pronouns only in the singular number. (It is interesting to note that the 'bound pronoun' isogloss does not here correspond with any strong linguistic boundary. Darkinyung and Awabakal have many fewer points of similarity to each other than Darkinyung has with its southerly neighbour Dharuk (T1 on map 7) and Awabakal has with Gadang (U2), to the north. Dharuk, like languages further south, has bound pronouns for sg, du and pl while Gadang, like languages to the north, has no bound clitics at all.)

All languages that have bound pronouns treat first, second and third person in the same way. This applies even to languages like Western Desert which do not have any third person form in the class of free pronouns. Sometimes all persons and numbers involve a non-zero clitic; many languages do have one clitic with zero form, and this always covers 3 sg (as in Western Desert).

There are in Australia examples of languages at various stages in the development of bound pronominal clitics from free forms. An early stage is exemplified by Ngiyambaa from central New South Wales. Free and bound forms for first and second person are:

	S/A form		O/dative/genitive/form	
	free	bound	free	bound
1 sg	*ŋadhu*	*-DHu*	*ŋadhii*	*-DHii*
1 du	*ŋalii*	*-lii*	*ŋaligii*	*-ligii*
1 pl	*ŋiyani*	*-ŋiyani*	*ŋiyanigii*	*-ŋiyanigii*
2 sg	*ŋindu*	*-ndu*	*ŋinuu*	*-nuu*

Except in 1 pl, bound forms are derived from free forms by simply omitting the initial consonant-and-vowel. Exclusive 1 du, exclusive 1 pl, and 2 du, 2 pl are derived by the addition of suffixes to inclusive 1 du, 1 pl and to 2 sg, just as for free forms (see under [4] in 11.1.5).

A sentence in Ngiyambaa can include EITHER a free pronoun OR the corresponding bound clitic, not both. In view of this, bound clitics can be thought of as synchronically derived from free forms; a pronoun will normally be reduced to a clitic unless it requires special emphasis. Pronominal clitics are in Ngiyambaa attached to the first word (or constituent) of a sentence, and are – as in Western Desert – ordered by person: first, then second, then third, irrespective of syntactic function.

Ngiyambaa has a rich set of determiners – *ŋina* 'this', *ŋana* 'that' and so on – but it has nothing that could strictly be called third person free pronouns. There are, however, third person bound forms. Whereas first and second persons have one form for A and S functions and another covering O, dative and genitive, third person has a distinct A form *-lu* ~ *-yu* (reminiscent of ergative marking on nominals), a genitive *-lugu*, and a third form *-na* covering S, O and dative functions. And whereas a first or second person clitic cannot co-occur with the corresponding free form (which has identical semantic content) the third person clitic *-na* can be used with a free form nominal (in S, O or dative function) – it carries a semantic specification of definiteness.

Compare Ngiyambaa sentences where a third person NP is shown just by a clitic, or just by a free nominal, or by both:

(4) *ŋaa+nhi+ju+na*
see+PAST+1sgA+3sgO
'I saw him.'

(5) *ŋaa+nhi+ju* *burraay*
see+PAST+1sgA child+ABS
'I saw a child/children.'

(6) *ŋaa+nhi+na* *burraay*
'I saw the child.'

In sentence (5) the NP *burraay*, without any reinforcing clitic, has an indefinite reading 'a child/children'; the addition of clitic *-na* in (6) indicates definiteness and also singular number, 'the child'. Note that in any of these sentences the 1 sg pronoun could, for emphasis, occur as a free form e.g.

(7) *ŋadhu+na burraay ŋaanhi*
'I saw the child.'

(Words can, potentially, occur in any order in a Ngiyambaa sentence.) Interestingly, the other third person clitics cannot co-occur with a free-form nominal e.g. *-lu*~*-yu* is not found in the same sentence as a noun or deictic in A function.

In Ngiyambaa the inclusion of bound pronominals is always optional; they cannot occur with free pronouns and can be regarded as reduced forms of free pronouns. In many languages of Western Australia, the Northern Territory and Victoria pronominal clitics have been 'grammaticised' – each sentence MUST involve appropriate clitics cross-referencing, say, subject and object NPs; NPs can be separately specified by nominals and/or free pronouns but this never permits the omission of bound clitics. Warlpiri is a language of this type: the pronominal clitics can be viewed as an obligatory system of grammatical specification – on a par with case, tense and the like – quite independent of whatever lexical information is included in NPs. (In this kind of language there is no way of indicating definiteness through third person bound forms, as there is in Ngiyambaa.)

Bound pronouns occur almost exclusively in languages that have (or recently had) a nominative–accusative paradigm for free pronouns, in both sg and n-sg numbers; there is no necessary connection between these two features, the isoglosses just happen to run in this way. (One exception is Yaralde, whose free pronouns can optionally be reduced to enclitics, much as in Ngiyambaa. The 1 sg pronoun in Yaralde, for instance, has distinct forms for all three core functions – S *ŋabi*, A *ŋadhi*, O *ŋany*, and this distinction is preserved in the clitics S *-ab(i)*, A

-adhi(i), O *-any*.) It is thus scarcely surprising that systems of bound pronouns invariably have one form for S and A functions, and a different form covering O and perhaps dative.

Languages which lack bound pronouns – Warrgamay and Dhalandji, for instance – make considerable use of free-form pronouns; these may be the most frequently used words in texts. But for languages that demand obligatory bound clitics in each sentence, free-form pronouns are largely redundant, being used mostly for special emphasis. There is a tendency in these languages to simplify the free-form paradigm. Thus an earlier stage of Warlpiri must certainly have had nominative–accusative free pronouns, like most Australian languages, and it is these that gave rise to the modern system of bound forms; recently, free pronouns have been reassigned an absolutive–ergative case system – taking the old SA forms *ŋaju* and so on as the new roots (used in S and O functions) – on the analogy of nominals.

In one or two languages with well-developed bound pronominals, the original free-form pronouns have dropped out of use. Thus we find in Gundungura (language S on map 7) pronominal enclitics to the verb (cross-referencing S and A functions), which are added after tense and other inflections: 1 sg *-ŋga*, 2 sg *-nji*, and so on. Free-form pronouns in this language simply involve the addition of these enclitics to an invariable root *gula*, thus 'I' *gula*+*ŋga*, 'you' *gula*+*nji* etc.

The southerly dialect of language H1 from map 7 (discussed in 8.5) behaves in the same way as Gundungura, and so too does Warnman from Western Australia, almost 2,000 miles distant from S and H1. In Warnman reformed free pronouns involve bound affixes to an invariable root *barra-*, except that for the 1 sg free pronoun *barra* is used alone, without any affix:

WARNMAN	sg	du	pl
1	*barra*	*barragujarra*	*barrawarda*
2	*barraŋgu*	*barraŋgugujarra*	*barraŋguwarda*

Note that 2 sg involves *-ŋgu* added to the 1 sg form, and that duals and plurals are derived from singulars by the addition of *-gujarra* (related to the pA root **guDHarra(n)* 'two') and *-warda* respectively. These Warnman pronouns inflect like nouns; the root alone is used for S and O functions, ergative adds *-lu*, dative *-gu*, and so on.

It has been suggested that the development of bound pronouns must pass through certain necessary stages. Some scholars have insisted that the typically free order of words in a sentence for Australian languages would have to harden, so that pronouns always occurred in a fixed order after the verb, say, and THEN they might be reduced to clitics. Examination of Ngiyambaa and similar languages shows an intermediate stage of 'fixed word order' to be unnecessary (although of course bound forms might have developed by this route in SOME languages). The first stage is alternation between free pronouns and reduced forms, with the latter being typically attached to the verb or else to the first word of the sentence, irrespective of the preferred positions of free NPs. Detailed examination of Australian and other languages suggests that the order in which clitics occur does not necessarily relate to a fixed order of words in some earlier stage of the language.

In Pama-Nyungan languages bound pronouns are exclusively added to the end of a word – they are ENclitics. Some of the nonPN languages in the western and central far north have bound pronouns as proclitics, attached to the beginning of (usually) the verb. Most prefixing languages have bound pronouns as the very first element of a verb but some mingle them with other bound morphemes. In Tiwi, for instance, a verb will commence with the subject prefix, followed by tense and aspect markers, then the object prefix, then further aspect indicators followed by the root, and finally suffixes marking reflexive, reciprocal and causative. (The Tiwi spoken by younger people today tends towards a less complex morphology than the traditional variety of the language. Interestingly, subject prefixes are fully maintained while object prefixes are frequently omitted; this may relate in part to the fact that subject forms occur verb-initially, while object forms are embedded amongst a variety of other prefix types.) In most nonPN languages bound pronouns are prefixes (rather than proclitics) undergoing various assimilations etc., and being a fully integrated part of the verbal word. The Daly River languages constitute an intermediate type, with subject prefixes, but object clitics following the verbal stem. Object forms are fully segmentable, while subject, root and tense make up a portmanteau form – typical of a highly 'inflectional' language – that cannot easily be segmented into its constituent elements (see 12.2.7).

In a few languages there has been so much assimilation, contraction and restructuring of bound pronominal forms that it is not now possible to analyse the prefix to a transitive verb into distinct A and O elements. Languages of the Gunwinygu subgroup are of this type – the verb which we quoted from Rembarrnga in 1.1 and 8.1 has as first element a 'portmanteau prefix' *yarran-* which indicates first person augmented indirect object and third person minimal A NPs; see also (13)–(14) in 12.5 and (10)–(11) in 13.3.1.

In many languages bound pronouns are transparent reductions of current or former free forms; Ngiyambaa and Yaralde are typical examples. In other languages the relation to free-form pronouns is by no means obvious – this applies for the 1 sg and 2 sg clitics quoted above for Western Desert. In Mangala the O clitics 1 sg *-nya* and 2 sg *-na* could be related to original O free forms **ŋanya* and **nyina* and the 2 sg SA forms *-n* might be related to **nyin* (< **ŋin*), but 1 sg SA *-rna* (identical to the Western Desert form) has no obvious relation to regular free form pronouns. Note, though, that Warluwarra, a language from west Queensland that does not have bound pronouns, has 1 sg SA form *ŋarna*, in a system with the regular 1 sg O form *ŋanha*, 2 sg SA *yiba* (< **nyinba*) and 2 sg O *yina* (< **nyina*). Clitic *-rna* might conceivably be related to the Warluwarra free pronoun *ŋarna*; but it would remain to relate this to the recurrent pronominal forms discussed in 11.1.

Finally, we can exemplify the phenomenon of bound pronominal clitics in Australian languages by reference to Walmatjari, a close genetic relative of Warlpiri, spoken in north Western Australia. The system of cross-referencing in Walmatjari is as complex as that in any language, and involves a sentence constituent that can be called the verbal auxiliary.

Joyce Hudson has described the following structure for the Walmatjari auxiliary:

Modal Root	+ suffix$_1$	+ suffix$_2$	+ suffix$_3$	+ suffix$_4$	+ suffix$_5$
	SUBJECT (PERSON)	OBJECT (PERSON)	OBJECT (NUMBER)	SUBJECT (NUMBER)	ACCESSORY NP INDICATOR

There are three possibilities at the first 'modal root' slot – indicative *pa-* ~ *ma-*, interrogative *ŋa-* or imperative/hortatory *ϕ*. This is followed by four orders of suffixes that together indicate the person and number of 'subject' and 'object'. The possibilities at each are shown in table 11.6. The first and fourth suffixes supply information about the subject and second and third orders about the object. It will be seen that the semantic information carried by suffix$_1$ and suffix$_2$ largely (but not exclusively) concerns person while the other two suffixes are more concerned with number distinctions. A sample Walmatjari sentence is:

(8) *nya+nya ma+rna+ny+pinya+lu*
see+PAST INDIC+1plexclA+2duO+2duO+1plexclA
'We (pl excl) saw you two.'

Table 11.6

SUFFIX$_1$ – referring to Subject

	sg	du	pl
1 incl		*-rli*	*-rlipa*
1 excl	*-rna*	*-jarra*	*-rna*
2		*-n*	
3		ϕ	

SUFFIX$_2$ – referring to Object

	sg	du	pl
1 incl		*-rli*	*-rlipa*
1 excl	ϕ	*-jarra*	*-rna*
2		*-ny*	
3		ϕ	

SUFFIX$_3$ – referring to Object

	sg	du	pl
1 incl		*-nya*	*-panya*
1 excl	*-ja*		
2	*-ta*	*-pinya*	*-nya*
3	ϕ		

SUFFIX$_4$ – referring to Subject

	sg	du	pl
1 incl	ϕ	ϕ	ϕ
1 excl			*-lu*
2		*-pila*	
3			

The final element of the auxiliary, suffix$_5$, indicates whether there is in the sentence a special language-particular type of syntactic peripheral NP that has been called an 'accessory NP' (marked by the nominal inflection *-rla* ~ *-nga*(<**ngka*) ~ *-ta*). Examples of accessory NPs are 'I (tripped and) fell OVER THE MAN' and 'I chopped the meat FOR HIM'; see also (10)–(11) below. If there is a stated or implied accessory NP, suffix$_5$ shows *-nyanta* if it is 3 sg and *-rla* for any other person/number combination; if there is no accessory NP, suffix$_5$ is left blank.

First and fourth orders always refer to the A NP, for a transitive sentence, or the S NP, for an intransitive sentence. We have roughly referred to orders 2 and 3 as 'object' clitics but in fact their syntactic reference is more complex. They refer to an accessory NP if there is one, to a dative NP if there is no accessory constituent, and to an O (direct object) NP only if both accessory and dative are missing. Only in an intransitive sentence without accessory or dative extension will orders 2 and 3 be left blank. It should be noted that only two NPs can be cross-referenced by the auxiliary in any sentence. (Other Australian languages show similar cross-referencing systems. In the prefixing language Rembarrnga, for instance, one referent of the portmanteau prefix will be

A or S, and the other will be indirect object if there is one, and if not the O NP – see the examples given in 8.1, and mentioned above.)

Suffix$_2$ has the same form (given above) whether it refers to accessory, dative or O NP. The paradigm given above for suffix$_3$ applies when it cross-references an O NP; if it refers to a dative NP different forms are used, as in table 11.7.

Table 11.7

SUFFIX$_3$ – referring to Dative NP

	sg	du	pl
1 incl		*-ngu*	*-pangu*
1 excl	*-ji*		
2	*-ngu*	*-pilangu*	*-nyirrangu*
3	*-rla*		*-nyanangu*

Compare (8) with:

(9) *yi + nya* *ma + rna + ny + pilangu + lu*
give + PAST INDIC + 1plexclA + 2duDAT + 2duDAT + 1plexclA
kakaji + ϕ
goanna + ABS
'We (pl excl) gave the goanna to you two.'

If orders 2 and 3 are used to cross-reference an accessory NP, suffix$_3$ can be taken from either the O paradigm, as in (10), or the dative paradigm, as in (11):

(10) *kirra + rna + ni* *ma + rna + ny + ta + ϕ + rla*
sit + CONTIN + PAST INDIC + 1sgS + 2sgACCES + 2sgACCES +
1sgS + ACCES
'I was sitting with you.'

(11) *ruku + ka + ni* *ma + n + jarra + ngu + ϕ + rla*
block + TRANSITIVISER + PAST INDIC + 2sgA + 1duexclACCES +
1duexclACCES + 2sgA + ACCES
tuwa + ϕ
door + ABS
'You (sg) shut the door on us (excl) two.'

The auxiliary in Walmatjari can take main stress and has many of the characteristics of a full word. While the preferred position is as second element in a clause, it can occur in a later position. But an auxiliary is never found utterance-initially, suggesting that it is basically enclitic, generally to the first word of a clause.

Cross-referencing possibilities can help to distinguish between different nominal cases that have the same formal realisation (cf. 10.1, 10.2). Walmatjari is like many other Australian languages in marking dative in exactly the same way as purposive – by *-ku*~*-wu*. But only a dative NP, not a purposive, can be cross-referenced in the auxiliary. Similarly *-rla*~*-nga*(<**ngka*)~*-ta* is used for both locative and accessory; that there are two distinct cases can be seen from the fact that only accessory can be cross-referenced, never locative.

11.4 **Indefinite–interrogative pronouns**

Australian languages generally have a set of forms that can have indefinite or interrogative sense (or both). Bilingual informants will often translate a sentence with, say, the ergative of *ŋaan-*, as 'someone hit me – who did it?', the translation indicating that this is simultaneously an indefinite specification, and a request for further information. Sentence (1) in 5.2.2 is an example of the Dyirbal form *minya*, usually glossed as 'what', having in this instance an entirely indefinite meaning.

There are usually separate forms 'who, someone', with human reference, and 'what, something', with non-human reference – see 9.3. For brevity we will just use the glosses 'who', 'what' below. The most frequent pattern is for 'who' to inflect like (first and second person) pronouns, on a nominative–accusative paradigm, while 'what' takes absolutive–ergative case marking, like nominals.

Five basic roots for 'who', 'what' recur in non-prefixing languages, but in different types of combination. Table 11.8 gives the forms for 'who', 'what' and also the local interrogative–indefinite root 'where, somewhere' in a widely spread sample of languages.

[a] *ŋaan-*. Western Desert, Warlpiri and many other western languages have *ŋana* 'who' that inflects quite regularly on the nominal pattern; in these languages it carries no hint of a monosyllabic root (as the 1 sg root *ŋaju*/*ŋaja* fails to reveal its monosyllabic origin in languages from this region). But just as the 1 sg and 2 sg paradigms in eastern languages are

Table 11.8. *Examples of interrogative roots*

		'who'	'what'	'where'
Queensland	proto-Middle-Paman	**wanyu*	**ŋaani*	**wanyja*
	Gugu-Yalanji	*wanya*	*wanyu*	*wanyja*
	Dyirbal	*wanya*	*minya*	*wunyja*
	Warrgamay	*ŋaan-*	*minya*	*wanyja*
	Pitta-Pitta	*wara*	*minha*	*winhdha*
	Gunya	*wanhdhu*	*ŋani*	*wanhdha*
New South Wales	Gumbaynggir	*waarr-*	*minya*	*jugi*
	Ngiyambaa	*ŋaan-*	*minya*	*wanhdha*
	Malyangapa	*waranha*	*minhaga*	*wanhdha*
Victoria	Wemba-Wemba	*winyarr*	*nyanya*	*winja*
	Yota-Yota	*ŋani*	*minhe*	*warrga*
	Kuurn Kopan Noot	*ŋara*	*ŋana*	*wanhdha*
Western Australia	Western Desert	*ngana*	*nyaa*	*wanytjatja*
	Yinyjibarnrdi	*ŋana*	*ŋani*	*wanhdha*
Northern Territory	Warlpiri	*ngana*	*nyiya*	*nyarrpara*
South Australia	Diyari	*wara-*	*minha*	*warda+yarri* (lit: 'which+place')

clearly related to monosyllabic proto-forms **ŋay* and **ŋin>nyin*, so an examination of forms cognate with western *ŋana* suggests a monosyllabic root **ŋaan-* (the long vowel occurs consistently in those languages that have maintained the pA length distinction in initial syllables). Thus:

<table>
<tr><th></th><th>S</th><th>A</th><th>O</th><th>genitive</th><th>dative</th></tr>
<tr><td>Warrgamay</td><td><i>ŋaanga</i></td><td><i>ŋaandu</i></td><td><i>ŋaana</i></td><td><i>ŋaanu</i></td><td><i>ŋaanungu</i></td></tr>
<tr><td>Ngiyambaa</td><td><i>ŋaandi</i></td><td><i>ŋaandu</i></td><td><i>ŋaandi</i></td><td colspan="2"><i>ŋaangu</i></td></tr>
</table>

Ergative involves the addition of *-du* to *ŋaan-* in both languages, and the O form *ŋaana* in Warrgamay can be related to **ŋaan-* plus accusative **-NHa*. Genitive *ŋaanu* is plainly formed on the same pattern as 2 sg genitive *ŋinu*(<**ŋin*). Warrgamay has adopted genitive as the base to which the stem augment *-n-* and then dative *-gu* is added (paralleling the 1 sg and 2 sg pronouns – see table 11.1); it is worth noting that Nyawaygi, Warrgamay's southerly neighbour, has exactly the same forms except that dative is *ŋaangu* (identical to dative–genitive in Ngiyambaa), contrasting with genitive *ŋaanu*. The final syllables on

Warrgamay *ŋaanga* and Ngiyambaa *ŋaandi* cannot be explained; they may have been added primarily to produce disyllabic forms (although why these particular syllables were chosen is unclear).

It seems that the original O form *ŋaana* has taken over as the root 'who' in western languages, with case inflections being added to this form (almost all western languages have lost distinctive vowel length, so that the root is just *ŋana*). In Western Desert *ŋana* inflects like a proper noun e.g. A *ŋana-lu*, SO *ŋana-nya*, and so on. It is interesting that whereas for 1 sg and 2 sg the A forms (*ŋaju*, *nyindu*) were in most cases taken over as the new root, for both 3 sg and 'who' the O form was generalised in western languages. This undoubtedly reflects the fact that first and second persons would most often appear as 'agent', whereas a third person or an indefinitely specified participant would be more likely to be in patient role – cf. 9.7.

Forms based on *ŋaan-* occur with the meaning 'who' in most languages of Western Australia and New South Wales, in some from Victoria and South Australia and in odd languages from various parts of Queensland; in the Western Desert language *ŋana-* also has the sense 'which place?' – see 2.1. It is likely that some of the forms for 'what' may be based on the same root; *ŋaani* 'what' occurs in parts of Queensland and on the Western Australian coast, while *ŋana* 'what' is found on the south coast of Victoria. It appears that *'who' > 'what' and also *'what' > 'who' are common meaning shifts in Australia. For instance, G. N. O'Grady has shown that proto-Ngayarda **ŋana* 'who', **ŋani* 'what' have given rise to *ŋana* 'what', *ŋani+nya* 'who' in the daughter language Nyamal.

[b] *waNH-*. 'Who' is *wanya* or *wanyu* in a few languages from northern and western Queensland and one or two from New South Wales and Victoria (but in no language further west); some languages also have a form for 'what' that appears to be cognate. There is evidence that these all go back to a monosyllabic root **waNH-*.

The interrogative–indefinite paradigm in Yidiny is:

	S	A	O	genitive	dative
'who'	*wanya*	*wanyju*	*wanyjuuny*	*wanyjunu-*	*wanyjuungu*
'what'	*wanyi*	*wanyiindu*	*wanyi*	*wanyinu-*	*wanyiingu*

The A form suggests an original root **wany-* with the regular ergative *-du* assimilating to become *-ju* after *ny*. It appears that *a* was added to *wany* in S function, to form a disyllabic root, and that oblique cases have been reformed on the base *wanyju*. 'What' has *wanyi* for S and O functions but a root *wanyin* for other cases. Dyirbal, Yidiny's southerly neighbour, also has 'who' with S form *wanya* and A *wanyju*. In Dyirbal all oblique cases are based on *wanyu*, which may well be the original genitive form e.g. modern genitive *wanyu+ŋu*, O *wanyu+na*, dative *wanyu+ngu*.

'Where' forms in Yidiny are based on a root *wanyja*; this is exactly the locative that would be predicted from monosyllabic **wany*, following the pervasive pattern of locative *-da* (with assimilation) paralleling ergative *-du*. It is significant that a 'where' form *waNHDHa* is found in probably the majority of non-prefixing languages, from every part of the continent; most of them do not have 'who' or 'what' based on **waNH*. This suggests that **waNH* may have been an interrogative root in pA, and that its locative form has been maintained in most branches while 'who' and/or 'what' forms have largely been replaced by variants on *ŋaan-*, *minya* etc. Certainly, the variety of combinations of the recurrent interrogative roots (as seen in table 11.8) indicates that these items may have been replaced – whether because of tabooing or for some other reason – at a far greater rate than pronouns have been.

'Where' is *wunyja-* in Dyirbal, with the first vowel assimilating to the preceding peripheral semi-vowel; the form is *wiNHDHa* in Wemba-Wemba and Pitta-Pitta, with assimilation conditioned by the following laminal consonants (and Wemba-Wemba also has *winyarr* 'who'). Note that in Gunya 'who' is *wanhdhu-*, presumably based on the original A form (following the pattern of 1 sg *ŋaju* and 2 sg *ŋindu*). Gugu-Yalanji has *wanya* as the root for 'who' in most dialects but *wanyju* in the Nyungal dialect; in each instance regular nominal inflections are added to the disyllabic root.

[c] *waarr-*. A scattering of languages from several areas have *wara* or *waarru* for 'who'. Besides Pitta-Pitta, Diyari and Gumbaynggir we can mention Ritharŋu *wara(li)*, proto-Northern-Paman **waari* (and maybe Warluwarra *ŋara*). Gumbaynggir has *waarru* for S and O but *waadu* for A function, suggestive of an original monosyllabic root *waarr*. But insufficient examples of *waarr*/*war* interrogatives are available to permit firm conclusions. (There is no evidence that *waarr* could be cognate with *wany*.)

[d] *miNHa* 'what'. This indefinite–interrogative form is found in almost every language in New South Wales and in some from Victoria, South Australia and Queensland (excepting the far north). It does not occur in any western language. *miNHa* always means 'what', never 'who', and appears always to inflect like a nominal; there is no hint of it being related to a monosyllabic root, at any stage of development.

Languages in North Queensland which do not have *miNHa* as an indefinite–interrogative form generally have a lexical item *miNHa* 'meat, (edible) animal'. It is likely that there has been semantic shift, with the generic noun *miNHa* 'animal' shifting to become an indefinite term 'something'; like other indefinites in most Australian languages this also had an interrogative sense 'what'. *miNHa* is now found with indefinite–interrogative sense over a large region centred in New South Wales (and in a few scattered languages outside this area) suggesting a pattern of areal diffusion.

There are a number of eastern languages which have *-ŋgu* and *-ŋga* as regular allomorphs of ergative and locative after a disyllabic stem ending in a vowel, but do have a small class of 'exceptions', taking *-lu* and *-la*. This class includes *miNHa* 'edible animal, meat' in some languages and *miNHa* 'what, something' in others, giving further support for the connection between these two forms, and the semantic shift '(edible) animal' > 'something'.

[e] *NHaa* 'what'. There are a few widely scattered languages with forms for 'what' that may be cognate with Western Desert *nyaa*. These include Wemba-Wemba *nyanya*, Banjalang *nyaa-* ~ *nyaŋ* (in some dialects, *minyaŋ* in others), Gupapuyŋu *nhä*, Thargari *nhaa* and maybe Kalkatungu *nhaka*, Gog-Nar *nhar-*, Ngarluma *nhala* and Warlpiri *nyiya*; note also Kalkatungu *nhani* 'who'. More detailed comparison is required to show whether these forms are definitely cognate (it is very unlikely that they are in any way related to *miNHa*).

The interrogatives in prefixing languages show only occasional resemblance to the roots we have surveyed. There may be more than accidental similarity in Mara and Warndarang *ŋani* 'who', and Maung *ŋanji* 'who', but most forms are quite different e.g. Maung *gunuga* ~ *gigi* 'what', Tiwi *kuwa* 'who' and *kamu* 'what'. The root *waNHDHa* 'where', that is so pervasive in non-prefixing languages, appears not to occur in the prefixing area.

Although 'who', in particular, usually inflects like a pronoun (most often like a singular pronoun, in fact) there are important differences. Unlike pronouns, interrogatives are not usually marked for number (except in a few languages like Warlpiri and Warluwarra where they have the same morphological possibilities as nouns). And no Australian language has interrogative–indefinite bound forms. Non-reduced pronouns are used for special emphasis, and there is generally emphasis on interrogative words (this may explain in part why they normally occur sentence-initially in English, and in some Australian languages). The semantic function of an interrogative in a sentence would make its encoding as a bound clitic quite inappropriate.

12

Verbs

12.1 Verbal categories

Every verb in an Australian language is either strictly transitive – occurring with subject (A) and object (O) core NPs – or strictly intransitive – occurring just with a subject (S) core NP. It is usually a simple matter to determine transitivity. If a verb can occur in a sentence with a nominal in ergative case (marking A function) and/or with a pronoun in accusative form (marking O function) then it is transitive; if it can occur with neither an ergative noun nor an accusative pronoun then it must be intransitive. Peripheral NPs, of both syntactic (dative, causal etc.) and local (allative, locative etc.) varieties, can occur equally freely in sentences of either transitivity.

A verb in a non-prefixing language will consist of a lexical root and an obligatory final inflection, indicating tense, aspect or mood (or a combination of these). Between root and inflection there can optionally intervene one or more derivational affixes. The structure of the verbal word is thus:

ROOT(+DERIVATIONAL AFFIX(ES))+INFLECTION

Bound pronominal clitics, in languages that show these, will generally be added after the inflection; they are only loosely bound – phonologically and morphologically – to the verbal word.

There are two kinds of derivational affix. The first type – which we call 'syntactic derivational affixes' – can occur only with a root that has a particular transitivity value, and derives a stem that has the opposite transitivity. For instance, a reflexive suffix can only be added to a transitive root, and forms an intransitive stem e.g. 'hide [something]'→'hide oneself'; a different type of affix can be added only to an intransitive root, and derives a transitive stem e.g. 'fall down'→'make [someone] fall down'. Syntactic derivational affixes are discussed in 9.4.1 and 12.4.

Most Australian languages also have one or two derivational suffixes of a different sort. They can be added to any type of root and do not affect transitivity; these suffixes provide semantic modification of the verbal root, such as might be achieved by the use of separate words (e.g. adverbs or particles) in other languages. Derivational affixes of this 'non-syntactic' type can indicate 'continuous', 'inceptive' (start to do), 'volition' (done by choice), 'habitual', or that something is done during (or after) 'coming' or 'going', and so on. Although similar meanings are encountered in widely separated languages it is generally true that each language has its own set of non-syntactic verbal suffixes, different from those of its neighbours. Even where there is semantic similarity, the forms of the affixes are quite different. It seems that in most cases non-syntactic derivational affixes on verbs have developed rather recently, usually through free words being reduced to bound affixes and incorporated into the verbal word between root and inflection. (See also comments on the development of 'verbal auxiliaries' in Diyari and nearby languages – 12.3.)

There is usually a fixed order in which derivational affixes must occur. Quite often, syntactic and non-syntactic suffixes may be mingled together within this ordering. In Dyirbal, for instance, the suffixes *-gali-y* ~ *-nba-l* 'do quickly' and *-gani-y* 'do repeatedly' must follow the reciprocal affix (that derives intransitive stems from transitive roots) but should precede a reflexive suffix (which has analogous syntactic effect). Quite long sequences of derivational suffixes can be encountered, with a particular syntactic affix sometimes occurring twice in it – an intransitive root may be transitivised, then made reflexive, then transitivised again.

We will mainly be concerned, in this chapter, with verbal inflections, and the differing allomorphs they can have. Each verbal stem must take a final inflection; the same set of inflectional choices is available to every stem, irrespective of transitivity value. There is often no verbal inflection that has zero realisation; thus we cannot get the root occurring alone, as happens with the absolutive form of nominals in most Australian languages. The recognition of a verbal root is an analytic step, on the part of a linguist; speakers will not talk in terms of verbal roots (as they will in fact never talk in terms of morphemes) but only of fully inflected verbs. Underlying forms of verbal roots and affixes are chosen so that these may be combined together in the most straightforward way, to yield the occurring forms of verbal words.

Almost every Australian language has a distinct imperative form of the verb (the few exceptions include Kurtjar and Rembarrnga, where imperative falls together with future). Negative commands usually involve a particle 'don't' but there is sometimes in addition a separate negative imperative inflection (this is found mainly in eastern languages). A few languages have a continuative imperative inflection 'keep on doing it!'.

Some languages appear to have past, present and future inflections. There are languages in which past and present, or future and present, fall together; Dyirbal, for instance, has future *-ny* opposed to non-future (i.e. present-past) *-nyu* ~ *-n* while its neighbour Yidiny has past *-nyu* ~ *-lnyu* ~ *-rnyu* opposed to non-past (i.e. present-future) *-ŋ* ~ *-l* ~ *-r*. It is common for there to be a number of inflections covering future time – say, 'purposive' indicating obligation ('should' or 'must') and irrealis indicating intention or prediction ('will').

There are often inflections that specifically mark the verb of a subordinate clause; sometimes a distinction is made between, say, perfect and non-perfect relative clause markings ('I saw the dog being hit', versus 'I saw the dog which had been hit'). A few languages have a set of verbal inflections which simultaneously mark subordinate clause type, and also whether main and subordinate clauses have the same or different subjects; this 'switch-reference marking' is discussed in 13.6.2. A distinctive type of subordinate inflection – which occurs in perhaps most Australian languages – marks some undesirable event, that is to be avoided; the main clause will describe steps to be taken to effect the avoidance – e.g. 'don't go too near the fire lest you get burned' or 'I didn't go across the muddy patch lest I slip down'. This apprehensional inflection on verbs is semantically equivalent to the aversive inflection on nominals that was described in 10.1, 10.2. Parallel to the Yidiny sentences (15)–(16) from 10.1, that had an NP in aversive inflection, we find:

(1) *yiŋu* *waguuja* *garba+ŋ* *gudaga+ŋgu*
THIS+ABS man+ABS hide+PRES dog+ERG
bajaa+l+ji
bite+APPREHENSIONAL
'The man is hiding, lest the dog bite him (i.e. for fear that the dog might otherwise bite him).'

In languages which do not have a distinct apprehensional inflection, the general irrealis inflection may include this among its range of functions. (Further comments on subordinate clause inflections, their syntactic marking, and their relation to local case inflections in some languages, are in 13.5)

The major verbal inflections are, as would be expected, quite different in form and meaning from nominal cases. A notable exception is verbal purposive, which occurs in very many languages and almost always has the form *-gu*, identical to the recurrent nominal purposive. Verbal purposive is also unusual in that it can generally occur on a verb in a main clause OR on a verb in a subordinate clause (in some languages it is the only verbal inflection that can function in this way). A purposive subordinate clause describes some activity for which the event referred to by the main clause was a necessary preliminary, done SO THAT it should be possible, e.g. 'I am going out TO SPEAR WALLABIES', 'mother came out of the house TO LOOK AT THE SKY'. A main clause with purposive marking indicates some specific need – that the actor has to, or tries to, or wants to, or should perform the action e.g. 'I MUST SPEAR some wallabies [because, say, my family is in need of food]', 'We'll HAVE TO SHIFT CAMP soon [all the food around here is exhausted]'. (See 13.5.)

Purposive verbal inflection **-gu* can be reconstructed for proto-Australian, paralleling the pA nominal case **-gu*. There is a close semantic connection between the two suffixes – compare 'I'm going out FOR WALLABIES' and 'I'm going out TO SPEAR WALLABIES' – suggesting a unitary suffix in pA, which could go onto nouns or verbs (and was possibly the only pA affix with this property).

Many modern languages maintain *-gu* as both nominal and verbal inflection. Others have undergone changes in one or both areas. Yidiny, for instance, has nominal purposive *-gu* (10.1) but recently the original future inflection on verbs *-na* has shifted to a purposive meaning, replacing **-gu* (and the present tense inflection has expanded also to cover future). In Walmatjari, Warlpiri and some other western languages **-gu* has shifted from purposive to future meaning; in the Ngayarda subgroup there has been a further semantic shift, with *-gu* taking on 'present' meaning.

Other verbal inflections that can with confidence be reconstructed for pA are imperative **-ga* and past tense **-NHu*. A past or perfect suffix **-gi* (> *-ji*) occurs in a number of eastern languages and must go back to an early form, perhaps in one of the immediate daughters of pA. We mentioned in 11.1.4 that the final vowel of **NHu* has changed to *a* in a number of modern languages, and that the *u*>*a* isogloss for past tense almost coincides with the *u*>*a* isogloss for 1 sg, 2 sg (and sometimes 3 sg) pronouns.

Past inflection **-NHu* has undergone other formal and semantic changes in some languages. In Jabugay, for instance, it has reduced to a single syllable-closing consonant – past tense *-ny*. In Ngiyambaa *-NHa* signals present tense, while in Warrgamay *-nyu* indicates perfect aspect (an action that is irretrievably finished).

Warrgamay, in fact, makes no tense distinctions in the strictest sense. In addition to positive and negative imperative inflections, purposive *-gu*, irrealis *-ma* and perfect *-nyu*∼*-gi* there is what can only be called a 'general' or 'unmarked' verbal inflection *-y*. This can be used interchangeably with purposive, irrealis or perfect (although it cannot be substituted for imperative) or it can be employed where none of these is appropriate e.g. describing some present or habitual activity; *-y* is the normal inflection in narratives. We can say that *-y* in Warrgamay is used (i) when it is not considered necessary to make a specification for aspect, irrealis etc.; and (ii) when none of these possible specifications could apply. This unmarked inflection in Warrgamay occurs in sentence (1) of chapter 9. There is a similar 'unmarked' inflection in Warrgamay's southerly neighbour Nyawaygi and here it has the form *-nya*, most probably a reflex of pA past tense **-NHu*, whose semantic reference has in this instance been generalised.

12.2 Conjugations

We mentioned in 9.4.2 that most Australian languages have a number of 'conjugations'. Each inflection and derivation may have a different allomorph for each conjugation. A verb will belong to just one of the conjugational classes and will take appropriate suffixal allomorphs. Yidiny has three conjugations; the forms of five of its inflections are shown in table 12.1 (this extends the information given in 9.4.1).

All the inflectional contrasts shown in table 12.1 carry distinctions of meaning. Conjugational differences, on the other hand, appear to serve no communicative function. There is usually a correlation between conjugations and transitivity but this is at best a statistical indication. A speaker would have to learn the transitivity of each verbal root quite independently of its conjugational membership. In Yidiny, for instance,

Table 12.1. *Yidiny conjugations*

	conjugation 1 (open class e.g. *bala-n* 'to be open', *nyina-n* 'to sit')	conjugation 2 (open class e.g. *wawa-l* 'to see', *baja-l* 'to bite')	conjugation 3 (less than 20 members known e.g. *baja-r* 'to leave', *bayga-r* 'to feel sore')
imperative	*-n*	*-ϕ*	*-rr*
present-future	*-ŋ*	*-l*	*-r*
past	*-nyu*	*-l+nyu*	*-r+nyu*
purposive	*-na*	*-l+na*	*-r+na*
apprehensional	*-n+ji*	*-l+ji*	*-r+ji*

over 80 per cent of the roots in conjugations 2 and 3 are transitive but just 56 per cent of those in conjugation 1 are intransitive – in predicting that a conjugation 1 verb should be intransitive one would be right only slightly more than half the time!

It is relevant to ask why most Australian languages have conjugational distinctions that carry no semantic information. Close study reveals that conjugational systems do show important points of similarity across the continent, suggesting that it should be possible to reconstruct the conjugational system of pA. We attempt this in 12.2.2–3, and in 12.2.4 show that conjugations arose from individual phonological assimilations, contractions, blends and lenitions across root-affix boundaries.

The Yidiny system, in table 12.1, is quite typical. The optimal analysis is to take all verbal roots as ending in a vowel – *bala-*, *wawa-*, *baja-*, and so on. A separate 'conjugation marker' morpheme is recognised; this occurs between stem and inflection in some, but not all, instances. The conjugation marker comprises a single consonant; there is a distinctive marker for each conjugation. It is, in fact, convenient to 'name' each conjugation by its marker – we can refer to conjugations 1, 2 and 3 as the *-n-*, *-l-* and *-r-* classes, respectively, in Yidiny. Then the conjugational membership of each root or derivational affix can be shown by appending the conjugation marker to the citation form – *bala-n*, *wawa-l*, *baja-r*.

In the last row of table 12.1, apprehensional forms consist just of root, followed by conjugation marker, followed by the invariable inflection *-ji* e.g. *bala+n+ji*, *wawa+l+ji*, *baja+r+ji*. For past and purposive, conjugation markers are included between stem and inflection for classes 2 and 3 but not for conjugation 1; this again enables us to recognise invariable forms *-nyu* for past and *-na* for purposive. The alternative to segmenting the conjugational marker out as a distinct morpheme would be either (i) to say it was part of the root e.g. *balan-*; then we would have to specify the last segment of the root was sometimes deleted; or (ii) that it was part of the inflection e.g. *bala-nji*; then we would simply have three allomorphs of apprehensional – *-nji*, *-lji*, *-rji*, three allomorphs of past – *-nyu*, *-lnyu*, *-rnyu*, and so on.

It is normal in Australian verb paradigms for a conjugational marker to occur between root and MOST suffixes, but for the most common inflections to show a less regular pattern. This is exactly what happens in Yidiny – the present-future inflection appears to involve just the conjugation marker for classes 2 and 3 but to be *-ŋ* for conjugation 1; imperative is *-n* (the conjugation marker) for class 1, zero for class 2 and the trilled rhotic *-rr* for the *-r-* class.

The number of conjugations in Australian languages varies from two to around seven. (A few languages, mainly from the centre, lack conjugations, each inflection having the same form with every verbal stem.) There are recurring similarities in conjugational marker, transitivity correlation, actual roots that belong to the conjugations, forms of some inflections, and so on. We shall first review verbal conjugations in four sample languages that suggest what the proto-system may have been like, and then attempt reconstruction.

Most modern languages have reduced the pA conjugational distinctions, merging classes, reforming roots, and so on. It is interesting that the fewest changes have applied in the west, while verbs in many eastern languages have undergone quite radical restructuring and reanalysis (although there are occasional languages on the east coast with highly archaic systems). This contrasts with the development of pronouns; we saw in the last chapter that western languages show radical restructuring here while archaic pronominal systems are typically encountered in the east.

The conjugational pattern can be seen most clearly in non-prefixing languages (which are overall more conservative than the prefixing type); the sample languages we consider will all be of this type. However, the verbal system which we posit for pA has a clear reflection in almost every language from the prefixing area, providing the major evidence for genetic linkage. This contrasts with noun cases, where much of the detail we put forward for pA has simply been lost in the prefixing region, and also with pronouns, where few formal correspondences are apparent between the non-prefixing paradigm and the many different systems in prefixing languages.

12.2.1 *Conjugations in four modern languages*

Almost all the languages of Western Australia have between three and six verbal conjugations. There is at first sight considerable variation in inflectional and derivational categories, and in their phonological forms. However, a close examination of critical features enables us confidently to equate conjugational classes between these languages. In this section we compare the conjugations in Walmatjari and Western Desert, two representative western languages, and then attempt to relate these to conjugations in Guugu Yimidhirr and Nyawaygi, from the east coast.

WALMATJARI has five conjugations. The forms of the five major inflections in each conjugation are given in table 12.2 (using standard Walmatjari orthography i.e. *ng* for *ŋ*, and also *p*, *t*, *k*). The 'subordinate' inflection marks a verb in a dependent clause.

Table 12.2. *Walmatjari conjugations*

conjugation	1 (*ϕ*)	2 (*ŋ*)	3 (*n*)	4 (*l*)	5 (*rr*)
imperative	*ϕ*	*-ngka*	*-nta*	*-nyja*	*-rra*
future	*-wu*	*-ngku*	*-nku*	*-lku*	*-rrku*
past	*-rni*†	*-nya*	*-ni*	*-rni*	*-ni*
customary	*-lany*	*-ngany*	*-nany*	*-lany*	*-rralany*
subordinate	*-rnu*†	*-ngu*	*-nu*	*-rnu*	*-nu*

† The initial segment of past and subordinate for class 1 is *-ny-* after *ti*, *ni*, *li* or *rri*, and *-rn-* elsewhere.

We can recognise conjugation markers *ϕ* (zero), *ŋ*, *n*, *l* and *rr* respectively. Future forms are the most straightforward, involving just root, plus conjugation marker, followed by the invariable future inflection *-ku*; for the zero conjugation initial *k* of *-ku* has lenited to *w* (i.e. *k*>*w* when flanked by vowels). Comparative evidence suggests that the corresponding pA conjugation markers were *y*, *ŋ*, *n*, *l* and *rr*; *y* cannot occur syllable-finally in Walmatjari (as it cannot in most western languages) and has simply been dropped from conjugation 1.

We have mentioned that the verbal inflection *-ku* (= *-gu*) occurs in most modern languages; its original sense was purposive but this has shifted to future in Walmatjari. The original pattern of conjugation markers is most frequently preserved before this inflection. In contrast, there have usually been fairly extensive changes in imperative inflection, which relates to pA **-ka* (= *-ga*). In Walmatjari we find that *-ka* is preserved for class 2 after the homorganic conjugation marker *-ŋ-*; it assimilates to *-ta* after *-n-*; the *k* is dropped after *rr*; *-ka* is dropped altogether, to give zero inflection, in class 1; and *-nyja* appears in class 4. That is:

1. (*-y*) + *ka* > ϕ   3. *-n* + *ka* > *-nta*   5. *rr* + *ka* > *-rra*
2. *-ng* + *ka* > *-ngka*   4. *-l* + *ka* > *-nyja*

All of these are quite natural developments except *-nyja* which cannot, in our present state of knowledge, be explained.

The other three inflections do not have cognates in other languages and appear to be language-particular developments. Examination of the customary allomorphs suggests internal reconstruction of a suffix **-lany*, that would have followed the conjugation marker. There have then been changes at the marker-inflection boundary:

1. (*-y*) + *lany* > *-lany*   3. *-n* + *lany* > *-nany*   5. *-rr* + *lany* > *-rralany*
2. *-ng* + *lany* > *-ngany*   4. *-l* + *lany* > *-lany*

A nasal-plus-lateral sequence is not generally permitted within Walmatjari words, so that *l* has simply been dropped from the second and third conjugational forms. The sequence *rr* + *l* is similarly proscribed but here an epenthetic vowel *a* has been inserted. (The trilled quality of *rr* often makes it appear that there is a short vowel between it and a following consonant; the insertion of *a* in just this case is thus, on auditory grounds, quite natural.)

Past and subordinate begin with the same segment, except in class 2. It is reasonable to suppose that earlier forms of these inflections began with a nasal, possibly *n*. For classes 3 and 5 we have *n*+*n*>*n* and *rr*+*n*>*n* and for class 4 *l*+*n* yielding the retroflex nasal *rn*. The initial *ng* in class 2 subordinate is clearly the conjugation marker. We can not at present explain the class 1 and 2 past or the class 1 subordinate allomorphs.

The structure ROOT + CONJUGATION MARKER + INFLECTION is nowhere near as obvious in Walmatjari as in the Yidiny paradigm, in table 12.1.

But the Walmatjari forms can largely be explained in terms of an originally analytic pattern of this type. The tripartite structure is retained in future tense; elsewhere there has been phonological assimilation, deletion or epenthesis at the conjugation marker–inflection boundary so that it is not now possible to separate out marker and inflection within a synchronic analysis.

In 9.4.3 we mentioned that languages in different parts of the continent have varying numbers of monomorphemic verb roots. Those with a small number of unanalysable roots make much use of compounding. In fieldwork on Yidiny, I gathered 320 verbs, only 25 of which were compounds (of the remainder just over 150 belonged to class 1 in table 12.1, just over 120 to class 2 and less than 20 to class 3). Out of the many hundreds of verbs that Joyce Hudson has recorded for Walmatjari there are only about 40 monomorphemic items; the remainder are compounds with one of the monomorphemic roots as final constituent. Only 5 of these roots are intransitive, an unusually small percentage (cf. 9.4.3). In Yidiny all roots consist of at least two syllables. All Walmatjari verbal words are disyllabic or longer, but Walmatjari differs from Yidiny in having eleven monosyllabic verb roots.

The membership of the five conjugational classes in Walmatjari is as follows:

CONJUGATION 1 (*ϕ*). 25 members, all disyllabic; 22 are transitive (the final vowel being *u* for one root, *i* for 5 and *a* for the remainder) and 3 intransitive (all ending in *i*). Sample members are transitive ***karla-ϕ*** 'dig', ***mapa-ϕ*** 'paint, rub', ***luwa-ϕ*** 'hit with missile, throw'; intransitive ***wanti-ϕ*** 'fall', ***karri-ϕ*** 'stand'.

CONJUGATION 2 (*ŋ*). 6 members, all disyllabic and transitive:

ka-ŋ 'carry' *lu-ŋ* 'cry' *nya-ŋ* 'see'
pu-ŋ 'hit' *yu-ŋ* 'give' *waa-ŋ* 'follow'

CONJUGATION 3 (*n*). 3 members, all monosyllabic and ending in *a*:

transitive – *la-n* 'pierce, spear', *ma-n* 'do' (appears only in compounds)
intransitive – *ya-n* 'go'

CONJUGATION 4 (*l*). 2 members, both monosyllabic, transitive and ending in *a*:

ma-l 'speak', *nga-l* 'eat'.

CONJUGATION 5 (*rr*). Contains nine disyllabic forms, all transitive and ending in *a* e.g. *paja-rr* 'bite', *ngaja-rr* 'excrete', *wanyja-rr* 'leave', *jama-rr* 'copy, imitate'; and a monosyllabic bound formative *-ka-rr* 'place'. Hudson suggests that these could all be analysed as reductions of compounds with *-ka-rr* as second element e.g. *paj+ka-rr→paja-rr*. An argument against this is the fact that *paja-* occurs as a monomorphemic root in many other languages (*j* can occur at the end of a morpheme in Walmatjari but this is not permitted in most other languages, including close relatives of Walmatjari, and it is unlikely to have occurred in pA).

There are just two irregularities. The three monosyllabic verbs in class 2 that end in *u* change this vowel to *i* before past tense *-nya*; thus we get imperative *ka+ngka* 'carry!', *yu+ngka* 'give!'; past *ka+nya* 'carried' but *yi+nya* 'gave'. And monosyllabic *nya-ŋ* 'see, look at' can optionally omit the conjugation marker *-ng-* before inflections beginning with *-k-* e.g. imperative *nyangka>nyaka*, and future *nyangku>nyaku*(*-ng-* cannot be omitted after any other root from this class). This dropping of the nasal *ng* when it is the first element of a consonant cluster is undoubtedly conditioned by the initial *ny* of the root (note that no other root in the class has an initial nasal), and is an example of the nasal dissimilation that recurs in Australian languages – see 7.5.

It will be seen from table 12.2 that the only zero inflection is imperative, on class 1. This conjugation does not involve any monosyllabic roots and so a zero inflection is permissible within the general constraint that all verbal words in Walmatjari should be disyllabic or longer. Classes 2, 3 and 4, which do have monosyllabic members, must have each inflection at least a syllable in extent in order to yield disyllabic words.

WESTERN DESERT, spoken to the south of Walmatjari and fairly closely genetically connected to it, differs in having several hundred monomorphemic verb roots, in addition to some hundreds of compounds. (Typologically, it is part way between Walmatjari, where 90 per cent or more of verbs are compound, and Dyirbal, where 90 per cent of at least the most common 500 verbs are monomorphemic – see 9.4.3.). There are four verbal conjugations in Western Desert, one fewer than in Walmatjari.

Western Desert has a rich array of inflectional and derivational suffixes to verbs. We give just the three most common inflections in table 12.3. Three of the future allomorphs coincide with those in Walmatjari but the other forms in table 12.3 differ in varying degrees from those in table 12.2. Nevertheless, it is possible to equate conjugational classes between the two languages. The Western Desert classes relate to pA conjugation markers *y*, *ŋ*, *n* and *l*; again *y* has been dropped since it is not permitted syllable-finally in Western Desert.

Table 12.3. *Western Desert conjugations (Pintupi and Ngaanyatjara dialects)*

conjugation	1 (ϕ)	2 (*ŋ*)	3 (*n*)	4 (*l*)
imperative	ϕ	*-wa*	*-rra*	*-la*
future	*-ku*	*-ngku*	*-nku*	*-lku*
past	*-ngu*	*-ngu*	*-nu*	*-rnu*

As in Walmatjari and the majority of Australian languages, the original pattern of ROOT + CONJUGATION MARKER + INFLECTION is most clearly preserved with purposive **-ku*, which has again shifted to a future sense. Imperative shows even more phonological change than in Walmatjari i.e.

1. (*-y*) + *ka* > ϕ 2. *-ng* + *ka* > *-wa* 3. *-n* + *ka* > *-rra* 4. *-l* + *ka* > *-la*

The only clue to the original *k* of **-ka* is *-wa* in the second conjugation, the peripheral semi-vowel *w* arising from lenition of *k*, which is typically preserved in class 2 after the homorganic nasal *ng*. The forms in classes 4 and 1 are straightforward developments; note that in Western Desert monosyllabic roots are confined to classes 2, 3 and 4 so that the occurrence of a zero allomorph for imperative in class 1 does not contravene the requirement that each verbal word should consist of at least two syllables.

Imperative *-rra* for class 3 might at first sight appear somewhat anomalous. It can, however, be explained in terms of assimilation of the stop in **-ka* to the preceding conjugation marker, yielding *-n* + *ta* (exactly as in Walmatjari), then loss of the nasal and a change *t* > *rr*; the final shift is commonly encountered in Australian languages (e.g. in Nyawaygi and Jabugay – 6.4.6, 6.8.3). The change *t* > *rr* parallels the change *k* > *w* for class 2 i.e.

2. *-ng+ka>-ka>-wa* 3. *-n+ka>-n+ta>-ta>-rra*

Past tense inflection involves just the conjugation marker plus *u* for classes 2 and 3; *-ngu* in class 1 suggests an original canonical form *-ngu* for past in Western Desert (further supporting evidence would of course be required before this could be accepted with confidence). The class 4 allomorph is *-rnu*, with an initial retroflex nasal, where *-l+ngu* might be expected; this cannot at present be explained.

The membership of conjugational classes in Western Desert is as follows (there are some variations from dialect to dialect, but these involve only minor changes to the overall picture):

CONJUGATION 1 (*ϕ*). About two dozen members, all disyllabic, around two-thirds of them intransitive. One root with final *u* (*yilu-ϕ* 'to die'), several with final *i* (*wanti-ϕ* 'leave', *kati-ϕ* 'bring, carry') but most have final *a* (*yula-ϕ* 'cry', *ngala-ϕ* 'eat', *nyina-ϕ* 'sit', *tjarrpa-ϕ* 'enter', *wangka-ϕ* 'speak', and so on).

CONJUGATION 2 (*ŋ*). Just three monomorphemic roots, all monosyllabic and transitive (together with many compounds having these roots as second member):

nya-ŋ 'see', *pu-ŋ* 'hit', *yu-ŋ* 'give'

CONJUGATION 3 (*n*). Perhaps twenty monomorphemic members, including three monosyllabics:

transitive – *ma-n* 'get', *tju-n* 'put down'
intransitive – *ya-n* 'to, come, move'

All but two or three of the disyllabic roots in this conjugation are transitive; most end in *a* although there are a few with final *i* and *u*. Examples are *puunta-n* 'press, crush', *ngurlu-n* 'become afraid'.

CONJUGATION 4 (*l*). An open class with at least 200 monomorphemic members, mostly transitive e.g. *parnrti-l* 'smell, sniff', *karta-l* 'cut, break', *parta-l* 'wait', *kanyi-l* 'keep, have, hold', *waku-l* 'raise stick or boomerang above the shoulder preparatory to throwing'. Basically, the members of this class are disyllabic or longer; the two or three monosyllabics all involve a long vowel and are language-particular onomatopoeic roots e.g. *taa-l* 'burst, explode, pop', *tjuu-l* 'call a dog by saying "*tjuu, tjuu, tjuu* . . ."'.

It will be seen that there is considerable difference between the size of corresponding conjugations in Western Desert and in Walmatjari; the *-l-* class in Walmatjari has only two members, while the *-ŋ-* class has six, and so on. But the occurrence of monosyllabic roots in classes 2 and 3 supports our identification of conjugations between the two languages. All of the Western Desert class 2 items occur in the corresponding conjugation for Walmatjari, as do two of the three monosyllables in class 3.

The conjugational patterns briefly described for Walmatjari and Western Desert are quite typical of those of languages of Western Australia and the central part of the Northern Territory. Languages in this region have between three and five or six conjugational classes. The original conjugational marker, *ϕ* (<**y*), *ŋ*, *n*, *l* or *rr*, is preserved between stem and inflection for purposive-future *-ku* and for some other suffixes, but in imperative and one or two other of the most frequent inflections diachronic change has led to fusion of conjugation marker and inflection, or else to partial deletion, and so on.

The conjugational classes have recurrent characteristics in western languages. The *y* class is predominantly intransitive and has a higher proportion of roots ending in *i* than any of the other classes. (Walmatjari is unusual in having so few intransitive verbs in this class; this is probably a consequence of the relative dearth of intransitives in Walmatjari.) No monosyllabic roots occur in the *y* class. The *ŋ* class is confined to a handful of transitive monosyllables, ending in *a* or *u*, in most inland languages, but in Mangala and Garadyari, from the north-western coast, the *ŋ* class has thirty or more members, again all (or almost all) ending in *a* or *u*, and all disyllabic except for the recurrent *ga-ŋ* 'carry, bring', *nya-ŋ* 'see', *yu-ŋ* 'give' and *bu-ŋ* 'hit'. In many western languages the *n* class consists of just two (or all three) of the monosyllabics *ya-n* 'go', *ma-n* 'take, get, carry in hand, grasp', and *ju-n* 'put down'; Western Desert is atypical of its region in also having disyllabic roots in the *n* class. The *l* class typically involves an array of disyllabic roots, predominantly transitive; some languages also have *ŋa-l* 'eat' and/or *ma-l* 'speak'. The *rr* class is missing from some languages – Nyangumarda lacks it, in addition to Western Desert – but where it does occur it is predominantly transitive and usually entirely polysyllabic.

In most languages there are just two 'open' conjugations – classes with a large number of members, into which newly acquired verbs would be likely to be put; the remaining conjugations are small closed sets which could not be extended by the addition of new roots.

One of the open classes in Australian languages is predominantly intransitive and new intransitive verbs will be included in it; the other open class has predominantly transitive membership with a new transitive verb being normally added to this class. It is the *ϕ-y* conjugation that is generally the open intransitive class while the *l*, or sometimes the *rr*, conjugation will be its transitive correspondent. Warlpiri, for instance, has more than 40 roots in the *ϕ* class and over 50 in the *rr* conjugation; the other three classes have between them only 8 members, all of them monosyllabics (there are no monosyllabics in the *ϕ* and *rr* classes) – these are *ka-ŋ* 'carry', *nya-ŋ* 'see', *pu-ŋ* 'hit', *yu-ŋ* 'give'; *ya-n* 'go', *ma-n* 'get, take', *ji-n* 'scold'; *nga-l* 'eat' (all except *ji-n* occur in Walmatjari). In proto-Ngayarda, a language spoken in the recent past on the Western Australian coast, it is the *y* and *l* classes which are open. In this language the *ŋ* class consists just of *bu-ŋ* 'hit' and *yu-ŋ* 'give', the *n* class just of *ya-n* 'go', *ma-n* 'take' and *dhu-n* 'put' (together with compounds based on them), while the *rr* class is confined to two disyllabic roots *wanhda-rr* 'leave, put' and *badha-rr* 'hit, blow'. In addition to a large, potentially open set of disyllabic roots the *l* class in proto-Ngayarda also includes two monosyllabics, *ŋa-l* 'eat' and *dha-l* 'hit'.

A major feature of western language is the recurrence of a small set of monosyllabic roots (just about all of which have been mentioned above) in the *ŋ*, *n* and *l* conjugations. A few disyllabic roots do recur in a number of languages, but by and large the list of polysyllabic verbs is rather different in different languages, in marked contrast to the identity of monosyllabics.

To the south of Warlpiri and east of Western Desert there is a group of languages in which each verbal inflection has a single form, that is used with all types of verb; Aranda and South Australian languages such as Arabana and Diyari lack any division of verbs into a number of distinct conjugational classes. Exactly the same situation is found in some languages of western Queensland – Pitta-Pitta, for instance, also lacks a conjugational contrast, with all verbal roots taking the same inflectional forms.

Moving further east we find that many languages of Queensland have two open classes – one, with conjugation marker *y* (sometimes alternating with *n* or *ϕ*), is predominantly intransitive while the other, with marker *l*, has mostly transitive members. Dyirbal has exactly this pattern, augmented by a single irregular verb 'to go' that has the form *yana-l* in imperative constructions but *yanu-l* elsewhere. Yidiny (described above) has an open intransitive conjugation with marker *n* (but corresponding to the *y* class in other languages) and an open transitive *l* class, but is mildly unusual in having a third conjugation with marker *r* and quite limited membership. In all of these areas – in Diyari, Pitta-Pitta, Dyirbal, Yidiny, and so on – there are no monosyllabic roots; verbal roots, as well as verbal words, must involve at least two syllables.

There are, however, two languages – spoken 250 miles apart on the north-east coast – which show monosyllabic roots and a pattern of five or more conjugational classes that appear to coincide exactly with the common conjugational pattern found in western languages. It appears that the original pA conjugational system is fairly well preserved in Guugu Yimidhirr and also in Nyawaygi, isolated pockets on the eastern fringe of the continent, while the system has been simplified and restructured in other eastern languages.

Table 12.4 lists imperative, past and non-past forms for the five conjugations in GUUGU YIMIDHIRR; other inflectional and derivational possibilities – purposive, conditional, reflexive etc. – involve increments to one of these three basic forms.

Table 12.4. *Guugu Yimidhirr conjugations*

conjugation	1 (*y*)	2 (*m*)	3 (*n*)	4 (*l*)	5 (*rr*)
imperative	*-ii*	*-waa*	*-naa* ~ *-rraa*	*-la*	*-rrV**
past	*-y*	*-dhi*	*-nay*	*-y* ~ *-dhi*	*-rrin*
non-past	*-V**	*-maa*	*-naa*	*-l*	*-rr*

* *V* is identical to last vowel in stem (and see text).

Classes 2 and 3 contain only monosyllabic roots while 1, 4 and 5 are entirely polysyllabic. However, all verbal words in Guugu Yimidhirr involve at least two syllables. Thus, non-past must be syllabic for conjugations 2 and 3 – the conjugation marker plus *aa* in each case – but can be just the conjugation marker for the *l* and *rr* classes; it involves lengthening of the final stem vowel for the *y* class.

Past inflections can be related to *-dhi* (< **-gi*) that occurs in a number of eastern languages. It is *-dhi* with those roots from class 4 that appear to be compounds with a monosyllabic final element e.g. *dhaaba+ŋa-l* 'ask', *gada+ba-l* 'break' (*-ŋa-l* and *-ba-l* do not occur outside a number of compounds of this type), and also with stems derived from nominal roots by the productive intransitive verbaliser *-ma-l*. Past is *-y* with other, disyllabic, roots from class 4. It is likely that past tense allomorph *-y* for class 1 is also a reduction from **-dhi*; note that *-dhi* is retained as past tense with the monosyllabic verbs of class 2. Past tense allomorphs in conjugations 3 and 5 could also derive from *-dhi* through the insertion of epenthetic vowels, and then reduction of the final syllable:

3. **-n+dhi>-nadhi>-nay*   5. **-rr+dhi>-rrin*

Accepting that the class 5 past form ends in a nasal, we should surely expect a laminal nasal here; in fact, some speakers do have past form *-rrinh*, although most prefer *-rrin*. It seems likely that *-rrinh* is in the process of being replaced by *-rrin*, as part of a general move towards eliminating final non-apical nasals in Guugu Yimidhirr. (The vowel *i* in *-rrin(h)* may also reflect the laminal quality of **-dhi*.)

The original imperative **-ga* has undergone a great deal of reduction, as in so many other languages. Class 5 verbs have *rr* followed by a repetition of the stem-final vowel if this is *a* or *u*. Thus, root *miidaa-rr* 'lift', imperative *miidaarra*; root *wugu-rr* 'follow', imperative *wugurru*; the few *i*-final roots in this conjugation take imperative *-rra* e.g. root *buunyji-rr* 'gather, heap up', imperative *buunyjirra*. The original *-y+ga* for class 1 has reduced to *-ii*, which replaces a stem-final vowel e.g. root *dhada-y* 'go', imperative *dhadii*. Imperative *-la* with class 4 parallels Western Desert, as does *-waa* with class 2 (although length on the final vowel here and in class 3 imperatives cannot at present be explained).

The two roots in class 3 form different imperatives: *wu+naa* 'lie down!' but *maa+rraa* 'take!'. Allomorph *-naa* involves the regular conjugation marker *-n-* while *-rraa* is identical to class 3 imperative in Western Desert (but for length on the final vowel). We can suggest the following historical stages in development of these imperatives:

wu+n+gaa>wundaa>   *wunaa*
maa+n+gaa>maandaa>maadaa>maarraa

The first stage would have been assimilation of *-gaa* to *-daa* following *n* (as in modern Walmatjari). We then suggest that *n* would have dropped only from the *maa-* form, this elision being conditioned by the initial nasal of the root – see 7.5. There has then been the common Australian change *d>rr* for 'take', and reduction *wundaa>wunaa* for 'lie down'.

Guugu Yimidhirr has a fairly small proportion of monomorphemic verbs, for an eastern language. In a dictionary of around 1700 roots, compiled by John Haviland, there are only about 215 non-compound verb roots. Membership of the classes is as follows:

CONJUGATION 1 (*y*). About twelve members, all disyllabic, three-quarters intransitive. Half end in *i* and half in *a* (none in *u*). Examples are *gada-y* 'come', *buli-y* 'fall', *yuuli-y* 'stand', *maandi-y* 'take, bring'.

CONJUGATION 2 (*m*). Three members, all monosyllabic. Two are quite regular in their inflections – *nhaa-m* 'see' (also used, with *milga* 'ear' in ergative inflection, for 'hear'), and *wu-m* 'give' (see also notes to 8.5). The third, with meaning 'rise, get up, ascend', has forms:

imperative	*walaa*
past	*wanyji*
non-past	*walmaa*

The root could be taken as *wal-* (this would be the only root we have recognised so far which ends in a consonant) with *wal+waa>walaa* for imperative (*lw* clusters do not occur) and *wal+dhi>wanyji* (by a non-explainable shift *dh>j*, and then assimilation) for non-past.

CONJUGATION 3 (*n*). The two members of this class, monosyllabic *maa-n* 'take, get, marry' and *wu-n* 'lie down, sleep, exist', have already been mentioned; the suffix which forms causative verb stems, *-ma-n*, also belongs to this class.

CONJUGATION 4 (*l*). This appears to be an open class (about 150 members are attested), entirely disyllabic and with 70 per cent of its members transitive. Slightly more than half of these roots end in *a*, the remainder in *i* (none in *u*). Examples are *baga-l* 'dig', *balga-l* 'make', *wagi-l* 'cut', *bandi-l* 'chop'. Compounds involving the non-productive formatives *-ŋa-l* and *-ba-l*, and the productive verbaliser *-ma-l*, were mentioned above.

CONJUGATION 5 (*rr*). This appears also to be an open class (Haviland's dictionary shows fifty members), also disyllabic. Around 65 per cent of its members are transitive. The final vowel of roots is equally divided between *a* and *u* (only one or two end in *i*). Some examples were given above.

Guugu Yimidhirr preserves pA distinctive vowel length in initial syllables. Thus **maa-n* 'hold in hand, grasp, carry, take' is preserved as *maa-n* 'take' in Guugu Yimidhirr but occurs as *ma-n* in Walmatjari and Western Desert which (like other western tongues) have lost this length distinction. Guugu Yimidhirr distinguishes two laminal series (6.5.1) – its *nhaa-m* 'see, hear' perfectly corresponds to *nya-ŋ* 'see' in the west. Cognates from other languages enable us to identify western *yu-ŋ* 'give' with Guugu Yimidhirr *wu-m* and possibly also Walmatjari *waa-ŋ* 'follow' with Guugu Yimidhirr *wal-m* 'get up' (see 12.2.2).

Correspondences between conjugations in Guugu Yimidhirr and classes in Walmatjari and Western Desert can be recognised on the basis of conjugation markers, predominant transitivity and monosyllabic members. They are reflexes of the same pA conjugations, which can be reconstructed on the basis of verbal patterns in many modern languages. It will be noted that the original class 1 marker *-y-*, that has been dropped in Walmatjari and Western Desert, is very evident in Guugu Yimidhirr.

The only important difference concerns class 2, which typically involves a small number of monosyllabic roots. The conjugation marker is uniformly *ŋ* in western languages but *m* in Guugu Yimidhirr. These are both peripheral nasals, differing only in a single feature (6.8), and it is not implausible that *ŋ* in the west should somehow correspond to *m* in the east. Data from Nyawaygi and Dhuwala/Dhuwal will, shortly, suggest an explanation here.

South of Guugu Yimidhirr is Gugu-Yalanji with two open classes and no monosyllabic members. Moving down the Queensland coast we encounter Jabugay with two conjugations, Yidiny with three, Dyirbal with two, Warrgamay with two, and then, just south of the town of Ingham, NYAWAYGI, which has seven classes and ten or so monosyllabic verb roots. Like Guugu Yimidhirr, some conjugations in Nyawaygi are exclusively monosyllabic while the remaining classes are entirely polysyllabic.

Nyawaygi has a rich system of nine verbal inflections; five representative endings are shown in table 12.5. It will be best first to outline the membership of the seven classes, before discussing the forms of inflections.

Table 12.5. *Nyawaygi inflections*

conjugation	1a (*y*)	1b (*ϕ*)	2a (*ŋ*)	2b (*m*)	3a (*n*)	3b (*n*/*ŋ*)	4 (*l*)
unmarked	*-nya*	*-nya*	*-nya*	*-nya*	*-nya*	*-nya*	*-nya*
positive imperative	*-yga*	*-ga*	*-ga*	*-ma*	*-na*	*-ga*	*-ϕ*
irrealis	*-yma*	*-ma*	*-jima*	*-njima*	*-njima*	*-jima*	*-lma*
recent past	*-yanya*	*-wanya*	*-wanya*	*-wanya*	*-nmanya*	*-wanya*	*-lanya*
purposive	*-ygu*	*-gu*	*-gagu*	*-magu*	*-nyagu*	*-nyagu*	*-gu*

CONJUGATION 1a (*y*). Only seven members occur in the corpus collected – all are polysyllabic; six are intransitive, ending in *a*, e.g. ***bana-y*** 'return', ***balba-y*** 'roll'; the only known transitive member is ***buymbi-y*** 'paint'.

CONJUGATION 1b (*ϕ*). This appears to be an open class; all members known are polysyllabic and intransitive. Two-thirds of its members end in *i*, the remainder in *a*, e.g. *juuba-ϕ* 'stand', ***baarri-ϕ*** 'cry, sob', ***baya-ϕ*** 'sing'. Also in this class is the inchoative suffix *-mbi-ϕ* ~ *-bi-ϕ* that derives intransitive verbal stems from nominal roots (see 12.4).

CONJUGATION 2a (*ŋ*). All members are monosyllabic. Transitive *nyaa-ŋ* 'see' and *wu-ŋ* 'give' are well attested; ***buu-ŋ*** 'drink' and *nyuu-ŋ* 'smell' may also be members of this class (perhaps just in one dialect of Nyawaygi).

CONJUGATION 2b (*m*). Contains just one verb, ***bu-m*** 'hit'.

CONJUGATION 3a (*n*). Three members, all monosyllabic – intransitive *ya-n* 'go' and transitive *yaa-n* 'throw', *maa-n* 'hold in the hand'.

CONJUGATION 3b (*n*/*ŋ*) has just two members, both monosyllabic and intransitive – *nyii-* 'sit' and *yuu-* 'lie down'.

CONJUGATION 4 (*l*). An open class, entirely polysyllabic, all known members transitive. Almost all have roots ending in *a* although there are four examples in the corpus with final *i*, e.g. *wana-l* 'leave [it] be, lose', *gunba-l* 'cut', *baji-l* 'find'.

Monosyllabic members, transitivity and conjugation markers clearly permit identification with classes in Guugu Yimidhirr, Western Desert and Walmatjari. One important feature is that Nyawaygi has separate *ŋ* and *m* conjugations. Correspondents of *nyaa-ŋ* 'to see' and *wu-ŋ* 'to give' and also of *bu-m* 'to hit' all fall together in an *ŋ* class for western languages, whilst *nhaa-* and *wu-* show marker *m* in Guugu Yimidhirr. This suggests that pA originally distinguished between *ŋ* and *m* classes but that these have fallen together in almost all modern languages; marker *ŋ* has been generalised also to cover *m* verbs in the west while in Guugu Yimidhirr *m* has been extended to mark **ŋ* class verbs.

This conclusion concerning distinct pA *ŋ* and *m* classes is confirmed by examination of Dhuwala/Dhuwal, from Eastern Arnhem Land. Dhuwala/Dhuwal has five conjugations, marked by *y*, *ŋ*, *m*, *l* and *n* (it has lost only the pA *rr* class). The *m* class has just one member – again *bu-m* 'to hit'. The *ŋ* class in Dhuwala/Dhuwal features *nhä-ŋ* (/nhaa-ŋ/) 'see', *gä-ŋ* (/gaa-ŋ/) 'carry, take, have' and *mo-ŋ* (/muu-ŋ/) 'forget' in addition to twenty-two polysyllabic roots. (The *y* class in Dhuwal/Dhuwala has 21 members, 18 of them intransitive; the *l* class has 25 members, 19 of them transitive; and the *n* class only a handful of monomorphemic roots.) Banjalang and Gumbaynggir, from New South Wales, also maintain the distinction between *-ŋ* and *-m* conjugation markers among their irregular verbs (see 12.2.6).

Nyawaygi is the only modern language known which distinguishes *y* and *ϕ* classes. They appear to have fallen together (in the same way that the *ŋ* and *m* classes have) in other languages, with the *y* marker having been generalised to cover verbs from both proto-classes. (There is comparative evidence that *y* did mark class 1 in a recent ancestor of Walmatjari and Western Desert – see 12.2.4.)

Although the verbal system of Nyawaygi has archaic characteristics inasmuch as it preserves the original *y-ϕ* and *ŋ-m* distinctions, it has undergone some changes from pA. There is, for example, no trace of an *rr* conjugation; this may have been imperceptibly merged with the open *l* class (although there is no positive evidence relating to this). Class 3b in Nyawaygi is rather odd, and does not clearly relate to a conjugational class in any other language. Some inflections are identical to class 3a(_n_) and others to class 2a(_ŋ_).

Turning now to Nyawaygi inflections, it will be seen that the most common verbal suffix, unmarked _-nya_ (probably a reflex of pA past tense _*-NHu_ – 12.1), has no allomorphic variants. Positive imperative _*-ga_ preserves its original form with _y_ and _ϕ_ classes while in 2a, 2b and 3a we have the contractions:

2a. _-ŋ+ga>-ga_   2b. _-m+ga>-ma_   3a. _-n+ga>-na_

Zero allomorph _ϕ_ is found in the polysyllabic _l_ class. Like the other languages we have mentioned, Nyawaygi requires that all verbal words consist of at least two syllables, so that inflections for the monosyllabic classes 2a, 2b, 3a and 3b must be at least a syllable in extent. (Compare with Walmatjari and Western Desert, where zero imperative allomorph occurs in class 1, not class 4.)

Irrealis has the form ROOT+CONJUGATION MARKER+_ma_ for the polysyllabic classes 1a, 1b and 4 while an additional syllable _-ji~-nji_ intervenes for the monosyllabic conjugations. Purposive follows a similar pattern except that in class 4 _l_ appears to have been lost before _-gu_; of the extra syllables here _-ma-_ for class 2b is plainly the conjugation marker _m_ plus _a_, _-ga_ for 2a could be related to _ŋ_ plus _a_, but the initial laminal of _-nya-_ for classes 3a and 3b cannot be explained. Recent past effectively involves the addition of _-nya_ (probably related to the unmarked inflection) onto _-ya-~-wa-~-nma-~-la-_. This may possibly relate to an original suffix _*-ma_, with contractions:

1a. _-y+ma->-ya-_	2a. _-ŋ+ma->-wa-_	3a. _-n+ma->-nma-_
1b. _-ϕ+ma->-wa-_	2b _-m+ma->-wa-_	4. _-l+ma->-la-_

(_*-ma_ is put forward as the form that best explains the modern allomorphs; there is no independent evidence for it. _*-wa_ would be another possibility.)

It will be remarked that there is no occurrence of _ŋ_ in the column for class 2a of table 12.5. A synchronic analysis of Nyawaygi would most appropriately label this as the '_g_ class'. But the occurrence of _g_ or _w_ as the first segment of inflections does reflect an original _ŋ_, as can be amply justified by comparative data from other languages.

Table 12.6 (overleaf) summarises the main characteristics of verbal conjugations for the four languages discussed in this section, together

Table 12.6. *Comparison of conjugations*

	y	*ϕ*	*ŋ*	*m*	*n*	*l*	*rr*
Nyawaygi	polysyllabic mostly intransitive 7 known	polysyllabic intransitive open	*nyaa-ŋ* 'see' *wu-ŋ* 'give' (*?buu-ŋ* 'drink') (*?nyuu-ŋ* 'smell')	*bu-m* 'hit'	*ya-n* 'go' *maa-n* 'hold in hand' *yaa-n* 'throw' *nyii-n/ŋ* 'sit' *yuu-n/ŋ* 'lie'	polysyllabic transitive open	–
Guugu Yimidhirr	polysyllabic mostly intransitive 13 known		*nhaa-m* 'see, hear' *wu-m* 'give' *wal-m* 'get up, rise'		*maa-n* 'take, get' *wu-n* 'lie down' and causative verbaliser *-ma-n*	polysyllabic mostly transitive open (150 known) and compounds in *-ŋa-l*, *-ba-l*, *-ma-l*	polysyllabic mostly transitive open (50 known)

Western Desert	polysyllabic mostly intransitive about 24 known	*nya-ŋ* ‘see’ *yu-ŋ* ‘give’ *pu-ŋ* ‘hit’	*ya-n* ‘move’ *ma-n* ‘get’ *ju-n* ‘put down’ and about 16 polysyllabics, mostly transitive	polysyllabic mostly transitive open (200 + members)	–
Walmatjari	polysyllabic 25 known (3 intransitive)	*nya-ŋ* ‘see’ *yu-ŋ* ‘give’ *ka-ŋ* ‘carry’ *pu-ŋ* ‘hit’ *lu-ŋ* ‘cry’ *waa-ŋ* ‘follow.	*ya-n* ‘go’ *ma-n* ‘do’ *la-n* ‘pierce’	*ma-l* ‘speak’ *nga-l* ‘eat’	*-ka-rr* ‘place’ and 9 disyllabic transitive forms (possibly analysable in terms of *-ka-rr*)
Yidiny	polysyllabic 56% intransitive open	–	–	polysyllabic 81% transitive open	polysyllabic 87% transitive less than 20 known

with Yidiny (see table 12.1). Note that the Yidiny conjugation which in a synchronic analysis must be assigned conjugation marker *n* relates to the *ϕ-y* class in other languages. It has members in common with the *y* class in Guugu Yimidhirr (e.g. *gada-n* 'to come') and with the *ϕ* class in Nyawaygi (e.g. *badi-n* 'to cry'). Analysis of place names – which typically preserve archaic features – reveals an original conjugation marker *y*. The *r* class in Yidiny corresponds to *rr* conjugations in other languages. (Yidiny and some of its neighbours are unusual in permitting r as a syllable-final consonant; cf. 6.6. We presume that there has been a diachronic shift *rr*>*r* in Yidiny; note that *rr* is preserved as the imperative inflection in this conjugation.)

Many more languages could have been described, for which the same patterns recur, in different combinations. But the information in table 12.6, and the recurrence of conjugation markers, should be sufficient to demonstrate the correspondence of conjugational classes between languages in different parts of the continent.

In the next sections we outline the likely verbal system of proto-Australian, and then describe the kinds of reinterpretation, restructuring, neutralisation, and so on, that have given rise to the diversity of conjugational systems found in modern languages.

12.2.2 *Reconstruction*

Comparison of modern languages in the non-prefixing region suggests reconstructing seven conjugations:

[i] *ϕ* class. Probably entirely polysyllabic; predominantly intransitive.

[ii] *y* class. Probably entirely polysyllabic; predominantly intransitive.
NOTE: Nyawaygi is the only modern language with distinct *ϕ* and *y* classes, and is the sole justification for setting up distinct classes in pA. The only monosyllabic verb in a *ϕ-y* class for any modern language is Yuwaaliyaay (New South Wales) *baa-y* 'jump'. The *ϕ-y* class is predominantly intransitive in every modern language save Walmatjari.

[iii] *ŋ* class. Monosyllabic and probably also some polysyllabic members; predominantly transitive.
NOTE: Some modern languages which retain an *ŋ* class have mainly (or only) monosyllabic members. Garadyari, Mangala and Dhuwala/Dhuwal, however, show two or three dozen disyllabic members in addition to three monosyllabics.

[iv] *m* class. The only modern languages that retain the *ŋ*/*m* distinction have just *bu-m* in this class. It is, however, possible that the pA *m* class could also have had some polysyllabic members (see the comments in 12.2.6 on restructuring of conjugations – this has evidently proceeded a fair way with the *m* classes in Nyawaygi and Dhuwala/Dhuwal).

[v] *n* class. Monosyllabic and some polysyllabic members; almost all transitive (although the intransitive *ya-n* 'to go' is perhaps the most frequently occurring member).

[vi] *l* class. Mostly polysyllabic, with a few monosyllabic members; predominantly transitive.

[vii] *rr* class. Mainly polysyllabic; predominantly transitive.
NOTE: The only modern language to show a monosyllabic root in this class is Gurindji with *pa-rr* 'to hit'. (Patrick McConvell suggests that this may be a development from **paja-rr* 'to bite'; wherever *pa-rr* occurs in compounds in the eastern dialect of Gurindji, the western dialect shows *paya-rr* e.g. *kakaj+pa-rr* ~ *kakaj+paya-rr* 'cut'.)

The majority of verbal roots end in *a*. About half the monosyllabic (and disyllabic) verbs in *ŋ*/*m* classes end in *u* as do one or two of those in *n*; few if any monosyllabic verbs end in *i*. The *y-ϕ* class contains a fair number of polysyllabic roots ending in *i* (and few or none in *u*). The *rr* class typically involves polysyllabic roots ending in *u* – 7 of the 9 polysyllabic *u*-final roots in Nyangumarda are in the *rr* class; half of the 30 *rr* class verbs in Guugu Yimidhirr end in *u* (the rest in *a*); of the 10 *u*-final roots in Yidiny, no less than 6 occur in the small *r* class. Most verbs in the *l* and *n* classes have final *a* but there are usually some members ending in *i* and in *u*.

Monosyllabic verb roots are amongst the most important evidence for comparison and reconstruction of conjugations. They will be crucial elements in any Etymological Dictionary of Australian languages since so many modern polysyllabic roots go back to a pA monosyllable. Those that can confidently be assigned to pA are:

ŋ CLASS
[1] *NHaa-ŋ* 'to see, look at' (extended to cover 'hear' in Guugu Yimidhirr). Examples of the occurrence of this monosyllabic root,

additional to those already given, are Gureng-Gureng (south-east Queensland) *nya-ŋ*, Warlpiri (Northern Territory) *nya-ŋ*, Dharuk (Sydney) *nhaa-ŋ*.

[2] *gaa-ŋ* 'to carry, bring, take'. Additional examples are Yuwaaliyaay (New South Wales) *gaa-ŋ* 'bring, take', Banjalang (New South Wales) *gaa-ŋ* 'bring', Warlpiri and Nyangumarda (Western Australia) *ka-ŋ* 'carry'.

[3] *ŋu-*∼*wu-*∼*NHu-*∼*yu-ŋ* 'to give'. The original root would presumably have been *NHu-ŋ* with assimilation of the initial nasal to the following vowel giving *ŋu-ŋ*. Lenition of nasal to semi-vowel has yielded the commonly occurring roots *yu-ŋ* and *wu-ŋ*. *ŋu-ŋ* is found in Awabakal and *ŋuN-y* in Ngiyambaa (New South Wales) and *nyu-ŋ* in Warumungu and Mudbura (Northern Territory). Many western languages have *yu-ŋ* e.g. Warlpiri and Nyangumarda, while *wu-ŋ* is the most common form in the east e.g. Wemba-Wemba (Victoria).

m-CLASS

[4] *bu-m* 'to hit'. This form is very widespread e.g. *pu-ŋ* in Warlpiri (where *ŋ* marks the combined *ŋ*/*m* conjugation) and *bu-m* in Gumbaynggir (New South Wales).

ŋ or *m* CLASS – monosyllabic roots that are known only in languages that have collapsed the *ŋ* and *m* classes into one conjugation include:

[5] *lu-*∼*du-*∼*yu-ŋ*/*m* 'to cry, sob, weep' e.g. Walmatjari and Gurindji *lu-ŋ*, Banjalang *du-ŋ*, Yuwaaliyaay *yu-ŋ*. (The correspondence *d*:*l*:*y* in initial position does recur in some other words e.g. *dirra*∼*lirra*∼*yirra*∼*rirra* 'tooth'; cf. also the comments on the possible relation between *d* and *l* in pA – 6.6.3.) Disyllabic forms based on this proto-root all involve an *ŋ* suggesting that it probably did belong to the *ŋ* class in pA (see 12.2.5).

m CLASS

[6] *ya-n* 'to go' (with meaning extended to cover any sort of going or coming movement in Western Desert) e.g. *ya-n* 'to go' in Warlpiri, Nyangumarda (Western Australia), Banjalang (New South Wales), Dharuk (Sydney), Gureng-Gureng (Queensland)

[7] *maa-n*. This root has a fair range of meanings in modern languages. Its original sense may have been 'hold in the hand' (although this is something of a guess; the question requires more detailed study than it has yet been given). Compare Nyawaygi *maa-n* 'hold in the hand' with Dharuk *maa-n* 'take', Gureng-Gureng *ma-n* 'take, hold', Nyangumarda *ma-n* 'take, grasp', Warlpiri *ma-n* 'get, take', Guugu Yimidhirr *maa-n* 'get, take, marry' and Walmatjari *ma-n* 'do'.

[8] *DHu-n* 'to put' occurs in Western Desert, proto-Ngayarda and a few other western languages, and is the basis for many compounds. Monosyllabic *n* class verbs with similar form occur in some eastern languages but their meanings are quite different and further evidence would be needed to prove genetic connection e.g. Gumbaynggir *juu-n* 'say to'.

[9] *ba-n* 'to fall'. It is likely that *ba-n* 'to fall' in Banjalang is cognate with *wa-n*~*wani-n* 'to fall' in Gurindji; there is a cognate monosyllabic root in the prefixing North Kimberley group – see 12.2.7. Many modern languages have a disyllabic root 'fall' commencing in *wa-* or *ba-* that may be based on the pA monosyllable e.g. Warlpiri *wandi-y*, Yidiny *wanda-n*, proto-Ngayarda *warni-*, Dyirbal *badji-y*.

l CLASS

[10] *ŋa-l* 'to eat' occurs in most western languages – Warlpiri, Gurindji, Nyangumarda and so on. It may be cognate with the formative *-ŋa-l* that occurs only in compounds in Guugu Yimidhirr; this is found predominantly in verbs from the avoidance style, including *bamba+ŋa-l* 'eat' (cf. *bamba* 'stomach' in Dyirbal), *midu+ŋa-l* 'see', *mini+ŋa-l* 'send'.

[11] *ma-l* occurs in a number of languages, with fairly different meanings: it is always a transitive verb. Besides Walmatjari *ma-l* 'speak to' and Gurindji *ma-l* 'tell' we find Ngiyambaa *ma-l* 'do, make' and Jabugay *maa-l* 'do, make'. There is a recurrent semantic connection between 'make' and 'tell' in Australian languages, suggesting that these are all cognates; in Gugu-Yalanji, for instance, *balga-l* covers the senses 'tell' and 'make'. (See also 12.4).

[12] *DHa-l* 'eat' occurs in Ngiyambaa and Yuwaaliyaay (New South

Wales) and Gureng-Gureng (Queensland); *ja-l* 'eat in Wemba-Wemba (Victoria) inflects on the same pattern as *wu-* 'give' suggesting that in this language monosyllabic verbs from the **ŋ* and **l* conjugations have fallen together into one class. *dha-l* 'hit' in proto-Ngayarda (Western Australia) is too different in meaning to be considered a likely cognate.

It will be seen that three of these monosyllabic roots showed a long vowel in pA – *NHaa-ŋ*, *gaa-ŋ* and *maa-n*. This is retained in those modern languages that continue the pA length contrast in initial syllables – these are generally languages that also retain monosyllabic verbs (and can be considered to be 'conservative' in a number of respects) e.g. Dhuwala/Dhuwal, Guugu Yimidhirr, Nyawaygi and Banjalang. Western languages have uniformly lost this length distinction – Walmatjari has *nya-ŋ*, *ka-ŋ* and *ma-n* alongside *pu-ŋ*, *ya-n*, *ma-l*, and so on. It is interesting, in view of this, to take note of the one monosyllabic verb in Walmatjari that does have a long vowel, *waa-ŋ* 'follow'. Comparison with other languages suggests a further pA root:
[13] *wal-ŋ/m* 'get up, rise'. In discussion of Guugu Yimidhirr we remarked on *wal-m* which could be taken as a consonant-final root belonging to the *m* class. It might be that *wal-ŋ* reduced to *waa-ŋ* in Walmatjari at a late stage, long vowels developing out of vowel-plus-liquid sequences in certain words some time after the original pA length contrast had been lost. We thus suggest:

pA	*NHaa-ŋ*	*wal-ŋ/m*
stage i – length lost	*nya-ŋ*	*wal-ŋ*
modern Walmatjari	*nya-ŋ*	*waa-ŋ*

There is certainly a semantic gap between 'get up' and 'follow' but they do both fall within the general sphere of motion and this meaning shift is not impossible. There are some probable cognates in south-eastern languages e.g. Yuwaaliyaay *wa-l* 'put in' and Gureng-Gureng *wa-l* (?) 'climb'. In addition, many disyllabic roots in languages from all over the continent appear to be based on this monosyllabic proto-form. Dyirbal has *walma-y* 'get up' (its imperative *walma* is identical to the imperative *walmaa* of *wal-m* in Guugu Yimidhirr save for length; Dyirbal lacks long vowels), *walmbi-l* 'lift up', *wanda-l* 'scoop up, hang up', *waynyji-l* 'go uphill', *wandi-l* 'go upriver' and *wanju-l* 'prop up'. Yidiny has *waŋgaaji-n* 'wake up, get up', Warlpiri has *warrka-rr* 'climb up' and

Dhuwala/Dhuwal *walma-y* 'go up from water onto land'. (Note that Western Desert also shows *wana-l* 'follow'.)

There are three further pA monosyllabic verbs whose original conjugational membership is not totally clear:
[14] *NYii-n* 'to sit', [15] *DHa*(*a*?)-*n* 'to stand', [16] *ŋu*(*u*?)- ~ *wu-n* 'to lie down'. *nyi-*, *ja-*, and *ŋu-* have been reported as belonging to the *n* conjugation in Warumungu (together with at least a dozen disyllabic roots); *wu-n* belongs to the *n* class in Guugu Yimidhirr. Very many languages have disyllabic roots *nyina-y* 'sit', *jana-y* 'stand' and *ŋuna-* ~ *wuna-y* 'lie'; the second syllable here certainly suggests that the original monosyllabic roots belonged to the *n* conjugation (see 12.2.5). Note that *nyii-* 'sit' belongs to a minor class in Nyawaygi (showing some similarities to both *n* and *ŋ* conjugations), together with *yuu-* 'lie down', that may conceivably be cognate with *ŋuu-* 'lie' (see the discussion of verb roots in prefixing languages in 12.2.7).

It should certainly be possible firmly to assign more monosyllabic verb roots to pA, once detailed information on further modern languages becomes available (thus far, adequate descriptions have been provided for less than half the languages). Thus *dhaa-n* 'copulate with' in Ngiyambaa is surely related to *ja-n*, with the same meaning in Djaru and Gurindji; *ju-n* 'scold' in Djaru and Gurindji is probably cognate with *ji-n* 'scold' in Warlpiri; the irregular monosyllabic *ŋaa-*(*ŋ*?) 'hear' in Dhuwala/Dhuwal may possibly be related to the irregular root *ŋarraa-ŋ* 'hear' in Gumbaynggir; *ga-*(?) 'to be' and *yii-l* 'bite' each occur in three or four languages from the south-east; *la-n* 'pierce, spear' is found in both Djaru and Walmatjari; and so on.

A number of monosyllabic verbs are at present known to occur in only one modern language – *yaa-n* 'throw' in Nyawaygi, *bu-ŋ* 'burn' in Djaru, *muu-ŋ* 'forget' in Dhuwala/Dhuwal, *dhuu-n* 'crawl' in Yuwaaliyaay, *ŋii-ŋ* 'tie' in Awabakal, *bi-l* 'dig' in Gureng-Gureng, among others. Cognates may in time be found for some of these in other languages.

A handful of recurrent nominal roots, which can certainly be attributed to pA, show formal and semantic similarity with some of these monosyllabic verbs. They were discussed in 5.1 and 6.6.2:

mal(*a*) ~ *mar*(*a*)	'hand'	– [7] *maa-n* 'hold in the hand'
DHaw(*a*) ~ *DHaa*	'mouth'	– [12] *DHa-l* 'eat'
DHan(*a*) (>*jina*)	'foot'	– [15] *DHa*(*a*?)-*n* 'stand'

These correspondences are suggestive of a relationship between some nominal and verbal roots in pA or even pre-pA times (just as rather recently a number of modern languages have evolved a verb *bina-l* 'to hear' from the noun *bina* 'ear', and so on). They are not systematic enough to us to be able to draw any specific generalisation from them (e.g. concerning derivational processes in pA).

There are a few disyllabic verbal roots that recur in a fair number of widely scattered languages, and may well go back to the pA stage. Thus *baga-l* 'pierce with pointed implement, spear' in Yidiny and Dyirbal from the north-east corresponds to *baga-l* 'dig' in Ngiyambaa from New South Wales and in Guugu Yimidhirr and to *paka-l* 'copulate with' in Thargari (Western Australia) and probably also to *paka-l* 'strike, bump' in Walpiri; *panti-l* 'to spear' in Warlpiri corresponds to *bandi-l* 'cut, chop', in Guugu Yimidhirr; *karli-y* 'to flow' in Warlpiri may relate to *gali-n* 'to go' in Yidiny; and so on.

There can be some irregularities in conjugational membership – *baja-l* 'to bite' occurs in Yidiny, Dyirbal, Western Desert and the Ngayarda group (in some of the Ngayarda languages it has shifted meaning – 'to eat' in Nyamal, Gariyarra and others and 'to drink' in Nhuwala) but *paja-rr* 'to bite' belongs to the *rr* class in Walmatjari. (Yidiny does have a homonymous root in the *r* class, *baja-r* 'to leave'. There is *patja-l* 'to leave' in Thargari, on the other side of the continent. Note, though, that Thargari appears to be merging the original *l* and *rr* classes into a combined *l* class; it has only two roots that still take *rr* inflections.)

But, generally, Australian languages show greater similarity in their monosyllabic roots and considerable differences in inventories of disyllabic verbs. A fair number of pA disyllabic roots will undoubtedly be reconstructable through detailed comparison of full modern vocabularies (a task that has scarcely commenced at the present time). But reflexes of these are probably outnumbered in every modern language by polysyllabic roots that have been formed from an original pA monosyllabic form, or derived from a nominal root, and so on – see 12.2.5.

12.2.3 *The proto-Australian verbal system*

The most efficient way to describe the verbal morphology of just about every modern Australian language outside the prefixing area is to set up a structure

ROOT(+ CONJUGATION MARKER) + INFLECTION specifying that the conjugation marker morpheme (which is always a single consonant – *y*, *ŋ*, *m*, *n*, *l* or *rr*) is included only before certain inflections, and then only for certain conjugations. All roots, set up under this scheme, end in a vowel.

This strategy of description enables a simple canonical form to be recognised for some inflections. But there are always some endings – usually, imperative and other very common inflections – that have idiosyncratic allomorphs in the various conjugations (which cannot, in synchronic analysis, be analysed in terms of conjugation marker plus invariable inflection).

We suggest that proto-Australian verbs had the following structure:

ROOT + INFLECTION

Roots could end just in a vowel or in *y*, *ŋ*, *m*, *n*, *l* or *rr*. Verbal inflections were simply added to the root. We are positing a simple agglutinative-type structure, where the morpheme boundary between root (or stem) and affix would have been consistently and clearly recognisable.

That set of roots which happened to end in *n* in pA has formed the basis of the *n* conjugation in modern languages; that set which ended in *l* has become the *l* conjugation, and so on for the other five classes. Every modern language has undergone some phonological changes involving the final consonant of the root and the first segment of the most common inflections – assimilations, blendings, deletions, epentheses and the like; the types of change are discussed in the next section. It is because of these phonological changes that it is necessary to recognise a number of distinct conjugational classes in modern languages, and to specify in the dictionary which class a given verbal root belongs to. The final consonant of the root, from pA times, still occurs in some verbal forms, but is now most revealingly regarded as a separate morpheme that 'marks' that conjugation.

Most modern languages have all roots (as well as all words) consisting of at least two syllables – this applies in Thargari, in the west, Diyari, in the centre, and Dyirbal and Yidiny, in the east, and so on. Most of the languages we have focussed on in this chapter have a few monosyllabic verbal ROOTS although all verbal WORDS must be disyllabic or longer. Verbal comparison and reconstruction clearly suggests that pA had a fair number of monosyllabic verbal roots (more than any modern language). This confirms the evidence from comparative phonotactics (6.6) and from pronominal reconstruction (11.1.4, 11.2, 11.4) concerning the extensive role which monosyllabic forms played in pA.

Reconstruction on the basis of modern conjugational patterns suggests that verb roots in pA could end in *ϕ* (i.e. in a vowel), *y*, *ŋ*, *m*, *n*, *l*, *rr*. Now on a priori grounds we should expect verb roots to end in any of the language's allowed syllable-final segments; *y*, *ŋ*, *m*, *n*, *l*, *rr* is PRECISELY the set of syllable-final consonants we posited for pA, within the rather speculative extrapolation of 6.6.3. Most modern languages have syllable- and word-final *n*, *l* and *rr* so that there is no difficulty in attributing these to pA. Eastern languages end syllables in *y* but western languages do not; the evidence from pronominal reconstruction – 1 sg **ŋay* – and from the verbal pattern clearly suggests that pA syllables could end in *y*. Most modern languages do not have words ending in the peripheral nasals *ŋ* and *m*. However, Hale's hypothesis concerning the evolution of modern ergative allomorphs *-ŋgu-*∼*lu*∼*-du* involves positing final *ŋ* at an early stage; the evidence of verbal reconstruction indicates that *m*, in addition to *ŋ*, must have been permitted syllable-finally.

Perhaps half of the modern languages can end words and syllables in the laminal nasal *ny*. It is surprising, in view of this, that we do not encounter an original *-ny-* conjugation. The evidence is, however, quite clear: there is NO TRACE AT ALL of an *-ny-* class in any modern language. It was largely because of this that we suggested in 6.6.3 that there could perhaps have been a single non-peripheral nasal phoneme in pA, with allophone [n] syllable-finally and [ny] syllable-initially. This does also help to explain why some modern languages have no words commencing with /n/ while others have just a handful – often, less than 1 per cent – of *n*-initial words.

The distinction between *ϕ* and *y* conjugations for Nyawaygi led us to reconstruct two distinct classes (although this is the weakest point in our historical extrapolation; on every other point there is confirmatory evidence from several languages). There is, however, no evidence that the *ϕ* class (or the *y* class, for that matter) contained monosyllabic roots. That is, there is no evidence that any of the monosyllabic verb roots in pA were open monosyllables – all those listed in the last section had the form CVC or CVVC. (The only open monosyllable that we have reconstructed for pA is 3 sg **NHu*>*ŋu* – see 11.2; it is not certain that this was a free form, occurring without any suffix.)

As already mentioned, the verbal inflections that can be attributed to pA are:

imperative **-ga*	past tense **-NHu*
purposive **-gu*	perfect/past (in east only) **-gi*

It is possible that at some very early stage pA or pre-pA was an isolating language, and that *-ga*, *-gu* etc. were originally post-verbal particles. Whether or not that was ever so, *-ga*, *-gu* and *-NHu* must – at the earliest stage that we are able to reconstruct – have been affixes, which were bound morphologically to verbal roots to form verbal words. It is conceivable that at this stage there could have been a zero inflection (somewhat parallel to absolutive on nominals) with much the same semantic scope as the 'unmarked' form in modern Warrgamay and Nyawaygi (see 12.2.1); we have no way of checking whether or not this was the case.

The language (outside the prefixing area) with the smallest number of monomorphemic verbs is Gurindji, which has only thirty, about a third of them monosyllabic (they split up into conjugational classes as follows, *y* – 11, *ŋ* – 5, *n* – 4, *l* – 2, *rr* – 8). We should not infer from this that pA had only thirty verbal roots – at least twenty (and perhaps as many as thirty to forty) monosyllabic roots can be attributed to pA, as well as a few score, at the least, of disyllabic roots.

An informed estimate of the number of verbal roots in pA will have to await detailed lexical reconstruction across the family. My guess (and it is very much a guess) is that there may have been between forty and eighty monomorphemic roots, probably distributed fairly evenly over the seven 'final-segment-of-root' sets (that have given rise to modern conjugations).

With such a limited number of monomorphemic roots, pA must have had a fair number of verbal compounds. Some modern languages – notably Gurindji – have exploited compounding to such an extent that the stock of monomorphemic verbs has been reduced. Other languages – almost all those from the east, and some from the west – have formed many new verbs that now have the status of unanalysable roots.

There has been a tendency, in the recent development of Australian languages, to eliminate monosyllabic roots and generally to merge conjugations, gradually reducing the complexities of the seven-conjugation system. We discuss these tendencies, and how they have given rise to the range of verbal systems found in modern languages, in 12.2.5, after first looking at the phonological changes that led the agglutinative pA pattern to develop into a system of conjugational alternations.

12.2.4 *Evolution of conjugations*

It is likely that in pA each inflection had a single phonological shape, and that it could be added to any verbal root or stem; the roots themselves ended in a vowel or in one of a set of six consonants. This technique of description would be applicable to Yidiny (table 12.1) if all inflections were like past tense and purposive – roots could be taken to end in a vowel, *l* or *r* (e.g. *bala-* 'to open', *wawal-* 'to see', *bajar-* 'to leave') with past-tense *-nyu* and purposive *-na*. It would also fit Western Desert (table 12.3) if all inflections were like future – roots such as *yula-* 'cry', *nyang-* 'see', *yan-* 'move' and *parnrtil-* 'smell' could all take future *-ku*.

But other inflections in these languages (and ALL inflections in other languages, such as Guugu Yimidhirr) cannot be described in these terms. There has been phonological change across ROOT–AFFIX boundaries, obscuring the original morpheme boundary. The changes have been conditioned by (i) the semantic nature of the inflection – imperative **-ga* has undergone reduction and contraction in every language, perhaps because of its pragmatic nature, whereas purposive **-gu* has generally undergone no, or else very little, change (we mentioned in 12.2.1 that the original pattern of conjugation markers is most frequently preserved before *-gu*); and (ii) the nature of the phonological segments involved – a nasal can assimilate in place of articulation to a following stop (or vice versa) whereas *rr* or *y* cannot; *g* or *j* may lenite to semi-vowels *w* and *y* respectively while *d* may change into the trilled rhotic *rr*.

Most western languages do not have *y* as a syllable-final consonant (although this was allowed in pA). The original sequence *-y*+*C-* (where C is a consonant) for a root from the *y* conjugation is thus not permitted, although it does continue in eastern tongues (cf. imperative *-y*+*ga* and purposive *-y*+*gu* in Nyawaygi for instance). In Walmatjari and Western Desert the original **y* has been dropped without trace; but other western languages have a clear reflex of **y* in some inflectional allomorphs. Consider imperative and future in Warlpiri, for instance:

conjugation	*y*	*ŋ*	*n*	*l*	*rr*
imperative	*-ya*	*-ngka*	*-nta*	*-nyja*	*-ka*
future	*-ju*	*-ngku*	*-nku*	*-lku*	*-ku*

Here the original imperative **-y*+*ka* has reduced to *-ya* so that *y* is now in permitted syllable-INITIAL position. For future in the *y* conjugation we have *-y*+*ku*>*-ju*; it seems that the laminal semi-vowel and dorsal stop have yielded a laminal stop, combining features of both original segments.

The types of change that have taken place between root-final and suffix-initial segments include:

[i] ASSIMILATION e.g. *-n+ka>-nta* for imperative in Walmatjari and Warlpiri;

[ii] BLENDING e.g. *-y+ku>-ju* for future in Warlpiri;

[iii] DELETION e.g. *-y+ka>-ya* for imperative in Warlpiri and *-rr+ka>-rra* for imperative in Walmatjari;

[iv] LENITION e.g. *-ŋ+ka>-ka>-wa* and *-n+ka>-nta>-ta>-rra* for imperative in Western Desert.

[v] EPENTHESIS e.g. *-rr+lany>-rralany* for customary in Walmatjari *+n+dhi>-nay* for past in Guugu Yimidhirr.

There are many other examples of these types of change; some were mentioned in 12.2.1.

A further type of assimilation is encountered between the vowel in the final syllable of a verbal root and the following 'conjugation marker' consonant. The *y* class usually includes some roots ending in *a* and some ending in *i* (with at most one or two ending in *u*). But of the twenty-two monomorphemic verbs in the *y* conjugation for Nyangumarda (Western Australia), twenty end in *i*, none in *a* (and there are two *u*-final forms with inherent reduplication – *rurru+rurru-* 'to move slightly' and the irregular *buŋgu+buŋgu-* 'come to get'). There are a number of cognates with verbs from the *y* class of other western languages:

Nyangumarda	*garli-*	'dig'	Warlpiri, Walmatjari	*karla-*
,,	*gambi-*	'burn'	,, ,,	*kampa-*
,,	*buŋgi-*	'fall'	Ngarluma	*buŋga-*

It is clear that Nyangumarda verbs have undergone a regular historical change:

-ay->-i-

The pA root-final *y* – which is preserved as a conjugation marker in Nyawaygi and Guugu Yimidhirr, has given rise to future *-ju* in Warlpiri, and has been dropped without trace in Walmatjari and Western Desert – has been involved in a contraction with the preceding root vowel in Nyangumarda.

The evidence points to each inflection in pA having been of at least one syllable in extent. Some modern languages have introduced considerable reduction, so that the most common inflections may now comprise a single syllable-closing consonant – thus present *-ŋ*~*-l*~*-r* in

Yidiny and allomorphs *-y* of past and *-l* and *-rr* of non-past in Guugu Yimidhirr. (But note that languages with some monosyllabic roots – like Guugu Yimidhirr – generally retain syllabic inflections in these conjugations, so that all words have at least two syllables. It is significant that the rule we described in 2.3 for deleting the final vowel from forms in Dhuwala applies only to words with more than two syllables. Present tense is *-ma* for the *ŋ* conjugation, giving Dhuwala *märra+ma* 'take/bring+PRES', *gä+ma* 'carry+PRES'; only the first reduces in Dhuwal – *märra+m* but still *gä+ma*.)

For most languages in other parts of the world the imperative is the shortest verbal form, often involving no addition to the root (sometimes even the deletion of a root-final segment). Australian languages are unusual in that imperative generally involves a syllabic inflection, a reflex of *-*ga*, just as does past tense, and so on. But there is a definite tendency to reduce imperatives, both through assimilation, deletion of segments, lenition and so on (as just described) and also through evolving a zero allomorph for one or other of the open, disyllabic classes. Both Walmatjari and Western Desert have ϕ imperative in the *y* conjugation, whereas Nyawaygi and Yidiny have ϕ in the *l* class. Dyirbal is one of the few languages in Australia which has zero imperative for all verbs; it uses just the verbal stem (with no conjugation marker or other suffixation) for imperatives in both its *y* and *l* conjugations.

Proto-Australian, then, probably had a transparent verbal structure; invariable inflections were added to each root. But then different types of phonological change took place between the final consonant of a root and the initial segment of an inflection, depending on the segments involved and the semantic category of the inflection. This led to multiple inflectional allomorphy. A speaker would have had to learn which of the seven or so conjugational classes a given root belonged to before he could know how to inflect it correctly. Conjugational classes correlated to a degree, but did not coincide, with transitivity classes. Thus, conjugational differences were an unwanted complication, that did not carry any semantic load; the formal difference between conjugations had to be learnt by every speaker but did not in any way help in the communicative task of the language.

As would be predicted, there has been a steady tendency towards simplifying conjugational systems – merging classes, and so on. This, together with a quite separate tendency towards eliminating monosyllabic roots, has led to a gradual reduction in the number of conjugations in modern languages. In the next section we outline the ways in which this simplification and reduction has operated, to yield the variety of modern verbal systems.

12.2.5 *Development of modern systems*

We can distinguish three basic factors in the development of Australian conjugational systems: elimination of monosyllabic roots; polarisation towards two or three open conjugational classes; and phonological simplification leading to conjugational merger. Taking these one at a time:

[i] ELIMINATION OF MONOSYLLABIC ROOTS

It is clear that pA had a fair selection of monosyllabic roots for verbs and pronouns (and, presumably, also for nouns). Most modern languages have replaced these by disyllabic roots, many of them going back to an original root-plus-affix combination. 1 sg pronominal root **ŋay* has given way to *ŋaju* in most languages, from the original ergative form **ŋay+ju*. The 3 sg pronoun **NHu*>*ŋu* has been superseded by *nyulu* in the east, involving the original ergative marker *-*lu*, and by *ŋunya* in the west, based on the accusative *-*nya*.

In exactly the same way, the most common verbs, which originally had monosyllabic roots, have been reanalysed to have a disyllabic basis. What was originally a fully inflected disyllabic form is taken as the new root, and assigned to one of the 'open' conjugations (the conjugation usually being chosen on the basis of transitivity correlation). This process has proceeded further in some languages than others – many, especially in the east, have lost all monosyllabic roots; others maintain just a few monosyllabics, a selection of the monosyllabic roots that we can attribute to pA. Different monosyllables are preserved in different modern languages, although the commonest and semantically most general verbs – such as *NHaa-ŋ* 'see' and *bu-m* 'hit' – occur in the majority of languages that still show roots of this type.

Nyawaygi is unusual among languages of its region in preserving about ten monosyllabic verb roots, including *wu-ŋ* 'give' and *ya-n* 'go'. Its northern and western neighbours Warrgamay and Warungu work entirely in terms of disyllabic roots; Warrgamay has *wugi-l* 'give' while Warungu has *yani-y* 'go' – both roots are identical to the perfect form in Nyawaygi (*wu+gi* and *ya+ni* respectively). Warrgamay's northerly neighbour Dyirbal also works in terms of polysyllabic roots but has *wuga-l* 'give', identical to the imperative form *wu+ga* in Nyawaygi (table 12.5). Dyirbal has just two open conjugations, a *y* class (whose members are 80 per cent intransitive, and all end in *a* or *i*) and an *l* class (80 per cent transitive, ending in any of the three vowels *a*, *i*, *u*). There is just one irregular verb 'to go' – this has the form *yana-l* in imperative constructions (including derivations, such as transitivised *yanama* 'go with [someone]!') and *yanu-l* elsewhere. These are plainly based on the imperative and (probably) past tense forms of a monosyllabic verb *ya-n* in an earlier stage of the language. The remodelled disyllabic root *yanu-* has probably been assigned to the *l* conjugation (although the majority of intransitive verbs are in the *y* class) because it ends in *u*; all *u*-final roots fall in the *l* class in Dyirbal.

No modern language preserves more than a portion of the pA monosyllabic roots – Nyawaygi and Walmatjari each have around ten, Guugu Yimidhirr and Western Desert around six, and so on. These languages often show disyllabic roots based on some of the other pA monosyllables. For instance, we mentioned that Western Desert has *ŋala-y* 'to eat', *yula-y* 'to cry, weep', and *kanyi-l* 'to keep, have, hold', plainly related to **ŋa-l*, **du-~lu-~yu-ŋ*, and **ka-ŋ* (see 12.2.2). The process of replacing monosyllabic by disyllabic roots is part-way to completion in these languages; in time we would expect all monosyllables to be replaced, as they have been in Yidiny, Dyirbal and Thargari, amongst many other languages.

The process of reanalysis can be seen in operation in Guugu Yimidhirr, which is still actively spoken by some hundreds of people at Hopevale mission, just north of Cooktown. John Haviland reports that although older speakers work in terms of a monosyllabic root *wu-n* 'to lie down', the younger generation is tending to reanalyse this as a disyllabic form from the *y* conjugation, *wuna-y*. The inflected forms are quite similar (cf. table 12.4):

	root *wu-n*	root *wuna-y*
imperative	*wu+naa*	*wun+ii*
past	*wu+nay*	*wuna+y*
non-past	*wu+naa*	*wuna+a*

In fact only imperative differs, and the reanalysis has the advantage of distinguishing imperative from non-past (*wu-n* is the only verb for which these two inflections fall together). Haviland reports that 'older informants categorically reject imperative *wunii* as a corruption; younger speakers often reject this form when presented with it, but themselves use it in the next breath'. (See also notes to 8.5.)

The most frequent inflection to be taken as a basis for disyllabic reanalysis is imperative, but other possibilities occur quite frequently. Which form does prevail appears to be fairly arbitrary. G. N. O'Grady has reconstructed *ma-n* 'take, pick up' for proto-Ngayarda, in Western Australia. One daughter language, Ngarla, appears to preserve monosyllabic *ma-* but other members of the Ngayarda subgroup show four different disyllabic roots; Gariyarra and Yinyjibarnrdi have *mangu-*, based on the proto-Ngayarda present inflection, Banyjima has *marna-*, identical to the original past form, while Balyku has *mana-* and Gurrama *mangi-*, forms that appear to have undergone idiosyncratic phonological changes. O'Grady also tabulates three or four modern disyllabic forms corresponding to each of *ya-n* 'go', *dhu-n* 'put', *ŋa-l* 'eat' and other monosyllabic roots from proto-Ngayarda.

It can be fascinating to trace the augmentations an originally monosyllabic root has undergone, across the continent. We have already referred to pA *lu-* ~ *du-* ~ *yu-ŋ* 'to cry, sob, weep'. This is still preserved as a monosyllabic root in one or two languages (many fewer than still keep *NHaa-ŋ* 'see' or *ŋu-* ~ *wu-* ~ *nyu-* ~ *yu-ŋ* 'give'). Thus Walmatjari and Gurindji have *lu-ŋ* and Banjalang, from north-east New South Wales, has *du-ŋ* 'cry', although this appears to be in the process of being reanalysed as a disyllabic root. Kalkatungu from west Queensland – a language that lacks any conjugational contrast – has disyllabic *luŋa-*. Dyirbal shows a trisyllabic root *duŋgarra-y* 'cry, sob, weep' – this is very probably cognate to *lu-* ~ *du-* ~ *yu-ŋ* with the Dyirbal form incorporating the conjugation marker *-ŋ-* and imperative *-ga*; no explanation is known for the third syllable *-rra-* (unless it is related to the productive Dyirbal verbal derivational affix *-yarra-y* 'start to do').

We mentioned in chapter 7 that languages in a few restricted regions of the continent have dropped the initial syllables of words. In some cases the vowel in the second syllable was raised, the raising being conditioned by the word-initial consonant, before the first syllable was lost. It is instructive to observe how these changes have applied to verbs in Mbabaram (cf. 7.1.2). The changes from pA monosyllabic roots *ja-n* 'stand' and *wu-n* 'lie', with imperative *-ga*, to modern Mbabaram roots *nɛ-* and *nɔ-*, with imperative *-g*, can be set out:

	ROOT + IMPERATIVE	ROOT + IMPERATIVE
pA monosyllabic stage	*ja+n+ga*	*wu+n+ga*
reduction of imperative	*ja+n+a*	*wu+n+a*
adoption of disyllabic root	*jana+ga*	*wuna+ga*
vowel raising	*janɛ+ga*	*wunɔ+ga*
initial and final dropping	*nɛ+g* 'stand'	*nɔ+g* 'lie down'

The original monosyllabic roots *ja-n* and *wu-n* were early reanalysed as disyllabics *jana-y* and *wuna-y*, the second syllable of the root being the original imperative (*ja+n+ga>jana* etc.). These new roots took imperative *-ga-*, *jana+ga* 'stand!', *wuna+ga* 'lie down!'. Then *a* in the second syllable of a word was raised to ɛ following a word-initial laminal and to ɔ after a word-initial dorsal; the initial syllable was dropped, as was the final vowel of the inflection. Modern roots are *nɛ-* and *nɔ-* with imperative *nɛ+g* and *nɔ+g*. The initial monosyllabic root has been entirely lost, and is reflected only in the quality of the vowels ɛ and ɔ, which are reflexes of *a* from an old imperative suffix. The initial segment, *n*, of modern roots is the old conjugation marker.

In Kurtjar, another initial-dropping language, the original first syllable has been lost, and there has been no vowel raising. *NYina-* 'to sit', *DHana-* 'to stand' and *wuna-* 'to lie' would all have fallen together as *na-*. In fact Kurtjar verbal root *na-* 'be, stay' does cover these meanings through phrases such as *oonhth na-* (literally 'buttocks' 'stay') 'to sit', *een na-* ('feet' 'stay') 'to stand' etc. (Note that Mbabaram has for 'to sit', *anya-*, for which no etymology can be given.)

There are, in all, at least four sources for polysyllabic verb roots in modern Australian languages. We have already mentioned that pA did have some disyllabic roots – *baga-l* 'pierce, spear', and the like – which occur in a number of modern languages; and we have just discussed disyllabic roots whose first syllable continues a pA monosyllabic verb with the second syllable going back to an original inflection. But perhaps the majority of modern polysyllabics relate to an original compound, whose first element was a nominal or the like and whose final component was a (usually, monosyllabic) verb; the first member may have ceased to function in the language outside this compound and the meaning may have shifted to such an extent that the root is now felt to be monolexemic (rather like *understand* in English; this cannot nowadays be semantically related to preposition *under* and verb *stand*). Some compounds may originally have been trisyllabic (with a disyllabic first member) but later lost a syllable through phonological shortening. Others could have been compounds of two monosyllabic elements. In the Pintupi dialect of Western Desert, for instance, there is a verb *kaarlpu-ŋ* 'to break' that is plainly based on *pu-ŋ* 'to hit'; *kaarl* is unknown in the modern language outside this compound. The fourth source of polysyllabic verbs is through a noun being incorporated into the verb class (much as we say *to knife* and *to butter* in English, although the process is much less productive in Australian languages than in English). Pintupi has made more use of this than most languages – corresponding to *wiru* 'good, lovely' it has *wiru-l* 'make good or lovely', and together with the noun *yarla* 'hole (in object)' it has a verb *yarla-l* 'to open, to cause a hole in an object'.

[ii] EVOLUTION OF 'OPEN' CONJUGATIONS

We have suggested that pA probably had something of the order of a few score monomorphemic verb roots, not unlike Dhuwala/Dhuwal. There is little evidence from modern languages that any monosyllabic roots occurred in the *y* or *ϕ* sets but, with this exception, it is likely that there were polysyllabic and monosyllabic pA roots ending in each of *ŋ*, *m*, *n*, *l* and *rr*. We can guess that each of these 'final-segment' classes – that were to develop into conjugation classes in modern languages – had roughly the same number of members; there may have been around one or two dozen roots in each class.

If a fairly small number of roots is distributed between six or seven classes it is quite likely that the classes will be fairly even in size. In this type of system new compounds will readily be formed, involving an invariable element (usually, one of the open class of nominals) as first element and one of the smallish set of monomorphemic verbs as second constituent; but new verb roots would very seldom be formed.

There has been a tendency in the development of most Australian languages to increase the set of monomorphemic verbs (although it must be emphasised that this augmentation must have taken place relatively slowly, over some thousands of years). When the set of verbs increases from a few score to a few hundred or more, new members are NOT added equally to each conjugational class. There is a polarisation tendency, with (usually) two conjugations becoming open classes, to which new verbs can freely be added, and the remaining classes contracting so that they involve just a handful of 'irregular' verbs.

The most common situation in Australian languages is for there to be two open classes, one predominantly intransitive and the other with a preponderance of transitive members. It appears always to be the *y* class that is the open 'intransitive' conjugation (although it will in almost every case have a number of transitive members); the open 'transitive' conjugation is most often the *l* class, although in some languages (e.g. Warlpiri) it is the *rr* class, and in others (e.g. Mangala) the *n* class (and there are almost always a few intransitive 'exceptions' in this open class).

It is probable that pA was like most modern languages in having around one-third of its verbal roots intransitive. Although there would have been a few intransitive roots in the *n*, *l* and *rr* classes (and probably also in the *ŋ* and *m* sets) the bulk of intransitives seem to have been in the *y*-*ϕ* classes. It is thus entirely natural that in languages where an open intransitive class has developed, it is the *y* conjugation. Probably the majority of members of each other pA class were transitive, so that any of *ŋ*-*m*, *n*, *l* or *rr* could, on a priori grounds, become the open transitive set. The fact that the *l* conjugation has assumed this role in the majority of modern languages may imply that the *l* set in pA had the largest concentration of polysyllabic transitive roots (or else that it contained what were the semantically most crucial transitive roots). And although no modern language has adopted *ŋ*-*m* as a fully open class we can note Dhuwala/Dhuwal where the *ŋ* class has 25 members, only just behind *l* with 29 and ahead of *y* with 21 and *n* with 4.

Once two (or three) conjugations become established as 'open classes' there is a tendency to transfer all polysyllabic verbs to these classes, so that the remaining conjugations consist of just those few monosyllabics that still remain in the language. This has happened in Warlpiri, which has five conjugations, corresponding one-to-one with those of Walmatjari, its close genetic relative, but with rather different membership. Warlpiri has more than twice as many monomorphemic roots as Walmatjari – there are over 40 in the open *y* conjugation (75 per cent of them intransitive) and more than 50 in the open *rr* class (90 per cent of them transitive); monosyllabic verbs make up the whole of the other three classes. In proto-Ngayarda it is the *y* and *l* conjugations which have become open classes; the *ŋ* and *n* conjugations contain just two or three monosyllabics while the *rr* class covers only two semantically central disyllabic roots. (The Warlpiri and proto-Ngayarda systems were described in more detail in 12.2.1 – see also 12.2.6.)

[iii] PHONOLOGICAL REASONS FOR MERGER

Conjugations could merge through analogical changes and/or through phonological changes over the root–affix boundary having produced such simplifications that the allomorphs for one conjugation coincided with those for another. The simplest change would be for all conjugation markers (erstwhile root-final consonants) just to drop. Nothing quite so straightforward as this appears to have happened – one factor militating against it would have been the existence of verbal roots that are distinguished only by the final segment e.g. *wu-ŋ* 'to give', *wu-n* 'to lie down'; *ma(a)-l* 'to hold in the hand', *ma-n* 'to do, make'; *DHa-l* 'to eat', *DHa-n* 'to stand'; *baja-l* 'to bite', *baja-rr* 'to leave'.

There must, however, have been many mergers of pairs of conjugations, through coincidence of their allomorphs. Examination of table 12.5 shows that the *ϕ* and *ŋ* classes in Nyawaygi coincide in unmarked, positive imperative and recent past inflections; for irrealis and purposive the *ϕ* allomorph is identical to the last syllable of the *ŋ* form. Clearly it would not require very much phonological and/or analogical change for these conjugations to merge. In Warlpiri the *rr* and *l* classes coincide in five of the seven inflections (they differ only in future *-ku*∼*-lku* and imperative *-ka*∼*-nyja*) – contractions *-rr+C-* and *-l+C-*, where C is a suffix-initial consonant, appear to have yielded the same sound in most instances. It would be a small further step for the *rr* and *l* classes to merge in Warlpiri.

12.2.6 *Types of modern system*

No modern language entirely preserves what we have postulated as the pA conjugational contrasts. Among the most archaic languages in this respect are Walmatjari, which has, however, merged *y-ϕ* and *ŋ-m* classes, and Nyawaygi, which has eliminated the *rr* class and developed *ϕ* and *l* as entirely polysyllabic open classes, confining monosyllables to the *ŋ*, *m* and *n* conjugations.

It is useful to recognise at least the following types of modern verbal system; we comment briefly on how each has developed from the pA system sketched in 12.2.3 according to the factors described in 12.2.5.

[1] DHUWALA/DHUWAL-TYPE. Smallish number of roots, fairly evenly distributed between the conjugations; most classes retain both polysyllabic and monosyllabic members. The *n* class in Dhuwala/Dhuwal has only four members (and the *m* class, one) but the *y*, *ŋ* and *l* conjugations each have a fairly equal share of the remaining four score roots. It is on the basis of languages of this type that we suggest that pA

conjugations (with the probable exception of *y* and *ϕ*) may have mingled monosyllabic and polysyllabic members.

We attribute an *m* class to pA on the basis of the *ŋ*/*m* contrast in Nyawaygi, Dhuwala/Dhuwal, Banjalang and Gumbaynggir, and the occurrence of *m* as a conjugation marker on pA *ŋ* class verbs in Guugu Yimidhirr; the only root that we can surely attribute to the *m* set in pA is *bum-* 'to hit', the sole *m* verb in both Nyawaygi and Dhuwala/Dhuwal. (Many languages have a disyllabic root based on *bu-* and this generally includes an *m* e.g. Ngiyambaa *buma-l* 'to hit'.) It is, however, quite likely that a number of polysyllabic roots ended in *m* in pA, as they did in *ŋ*, *n*, *l* and *rr*. The *ŋ*/*m* contrast has been neutralised in most modern languages, and polysyllabic roots from these classes have probably been transferred into the open *l* or *y* classes in many instances. We are suggesting that *bu-m* in Nyawaygi and Dhuwala/Dhuwal is something like *ŋa-l* in Warlpiri – this is the only member of the *l* class in this language, although data from other tongues indicate that in pA *l* may have been the largest set of all. In our present state of knowledge we can only guess about how many pA verb roots may have ended in *m*; detailed etymological research, and the diachronic analysis of disyllabic roots in modern languages, may throw more light on this question.

[2] WESTERN DESERT-TYPE. One or two conjugations have become open classes, but the remaining conjugations (or at least some of them) contain both monosyllabic and disyllabic roots.

[3] Two or three open conjugations, entirely polysyllabic; remaining conjugations are confined to monosyllabic members. There are a number of subtypes here:

[3a] WARLPIRI-TYPE. Two open polysyllabic conjugations, one mainly transitive (*rr*) and the other mainly intransitive (*y*); a handful of monosyllables making up the *ŋ*, *n* and *l* classes. It is likely (although it has not yet been fully proved) that, in the development of Warlpiri, disyllabic members from the latter classes were simply 'transferred' to one of the open classes.

[3b] GUUGU YIMIDHIRR/NYAWAYGI-TYPE. Three polysyllabic and two to three monosyllabic conjugations. Guugu Yimidhirr has two predominantly transitive classes (*l* with 150 known members and *ṙr* with

50) and also a polysyllabic *y* class with a dozen known members, two-thirds of them intransitive. The *m* and *n* classes each have three monosyllabic members. In Nyawaygi *ϕ* and *l* are the open, polysyllabic transitive and intransitive conjugations, but there is also a *y* class for which seven polysyllabic roots are known; the *ŋ*, *m* and *n* classes have from one to five monosyllabic members.

[3c] PROTO-NGAYARDA-TYPE. Two open polysyllabic conjugations (intransitive *y* and transitive *l*), two closed monosyllabic classes (*ŋ* and *n* with two or three members) but also a closed *rr* class with two polysyllabic members.

[4] Two or three open conjugations which involve both polysyllabic and monosyllabic roots. Again there are subtypes:

[4a] NGIYAMBAA-TYPE. This language has open *y* and *l* conjugations (57 per cent intransitive and 69 per cent transitive respectively) each including three or four monosyllabics; there is a third, *n*, class whose two members are both monosyllabic. It appears that the pA *y* and *ŋ* sets have merged, so that we now get *ŋu-* 'to give' taking *y* allomorphs, and so on. Ngiyambaa's neighbour and close relative, Yuwaaliyaay, has open classes *y* (65 per cent intransitive) and *l* (86 per cent transitive) as well as closed classes *ŋ* (fourteen members – half transitive) and *n* (seven members – half transitive). The *l*, *ŋ* and *n* classes each involve three monosyllabics and the *y* class one, *baa-y* 'to jump' (the only monosyllable reported for an 'unmerged' *y* class in any modern language).

[4b] JABUGAY-TYPE. This language has just open *y* and *l* classes. There are four monosyllabic roots, all transitive. All involve a long vowel. The vowel in one or two of these monosyllabic roots has probably been lengthened by a recent historical change; all monosyllabic words in Jabugay must have a long vowel and, since past tense _*-y+nyu~-l+nyu_ has uniformly reduced to a syllable-closing consonant *-ny*, we do get monosyllabic past tense form *maany* from *maa-l* 'do, make' (< pA _*ma-l_) etc. The other monosyllabic roots are *ŋaa-l* 'say, tell' (etymology not known), *duu-l* 'hit' (possibly related to *duyi-l* 'hit' in Dyirbal Jalŋuy) and *waa-y* 'give' (further evidence would be needed before this could be related to _*wu-ŋ_).

All the types described thus far still retain a handful of monosyllabic verbs, although none of these languages shows more than a fraction of the pA monosyllabic inventory. We can now turn to the large group of languages that have entirely eliminated monosyllabic verb roots:

[5] Two or three conjugations, entirely polysyllabic.

[5a] YIDINY-TYPE. Two open classes (*_y_ and _l_), but also a restricted _r_ class (with less than twenty members, most transitive). Thargari, from Western Australia, has a similar arrangement, except that only two verbs are reported from its _rr_ class.

Yidiny is closely genetically related to Jabugay, type [4b]. We can infer that proto-Yidiny–Jabugay would have had _y_, _l_ and _r_ classes with perhaps one or two monosyllabics in the _l_ class. Jabugay has dropped the small _r_ conjugation while Yidiny has replaced the monosyllabic roots by non-cognate polysyllabic forms (each root in modern Yidiny consists of at least two syllables).

[5b] DYIRBAL-TYPE. Two open classes, _y_ and _l_. Dyirbal also has one irregular root _yanu-l_~_yana-l_ 'go', relic from an old monosyllable (12.2.5). There are other languages of this type – perhaps the commonest among non-prefixing languages – that have NO irregularities.

[6] BANJALANG-TYPE. One open polysyllabic conjugation, but in addition a few monosyllabic verbs with irregular inflections, effectively continuing one or two of the monosyllabic classes.

Here all polysyllabic roots, whether transitive or intransitive, take the same inflectional allomorphs. Some pA monosyllabics have been reassigned polysyllabic roots, and inflect regularly. But just a few of the most frequently used verbs preserve their original forms, that are based on monosyllabic roots. This pattern is also found in Wemba-Wemba (Victoria) where the irregular verbs include _nya-_ 'see', _wu-_ 'give', _ya-_ 'go', _ja-_ 'eat', _ba-_ 'cook' and _bu-_ 'spear' (probably cognate with *_bu-m_ 'hit'). The same situation appears to hold in Kalkatungu, from West Queensland; in Dharuk, spoken at Sydney; and in languages spoken north of this on the New South Wales coast. Gumbaynggir has a single polysyllabic conjugation but also seven irregular verbs – _nyaa-ŋ_ 'see', _duu-ŋ_ 'cry', _bu-m_ 'hit', _ya(a)-n_ 'go', _maa-n_ 'take', _juu-n_ 'say to' and *ŋarraa-ŋ* 'hear' (the occurrence of vowel length in Gumbaynggir is partly idiosyncratic). Banjalang, on the New South Wales/Queensland border, has about a dozen irregular verbs; some – such as *duŋ-* ~ *duŋa-* ~ *duŋga-* 'cry' – appear to be part-way towards taking on disyllabic root form.

[7] ARABANA-TYPE. No conjugational contrast, all verb roots polysyllabic.

The Arandic group of languages, in Central Australia, some languages from West Queensland such as Pitta-Pitta, and most of the languages of South Australia have eliminated pA conjugational differences. It is likely that this happened quite gradually, with the languages passing through type [3] or [4] or [6] on the way. These languages often have inflections that can be traced back to pA purposive **-gu*, imperative **-ga* and past **-NHu*.

Even languages of this type can carry clues concerning their historical development from the pA system we have described. Luise Hercus has described how in Arabana there are four verbs whose regular root can occur in shortened form. Thus 'to take' is *manhirnrda-* although it can be abbreviated to *manda-*; both long and short forms are clearly developments from an original monosyllabic stem **maa-n* 'to hold, take'. The others are *wa*^{d}*nirnrda-* ~ *wanda-* 'to follow' (cf. pA **wal-m*), *gu*^{d}*nirnrda-* ~ *gunda-* 'to put down' (which may be related to pA **ju-n*) and *yanirnrda-* ~ *yanda-* 'to speak'. It is interesting to note that 'to give' is *ŋunhirnrda* in Arabana, with no shortened form attested; here the development of a polysyllabic root from **ŋu-ŋ* has been fully completed.

[8] WARRGAMAY-TYPE. Two open conjugations, one exclusively intransitive and the other exclusively transitive.

This is a development from type [5b]; instead of there being a statistical correlation between conjugations and transitivity classes, these now coincide. In Warrgamay each inflection has an intransitive and a transitive allomorph. 'Intransitive' roots can only take intransitive inflections and must occur in intransitive constructions, but 'transitive' roots can either (i) occur in a transitive sentence, with A and O NPs, the verb then bearing a transitive inflection, or (ii) occur in an intransitive construction, with an S NP (and perhaps dative or other peripheral NPs), taking then an intransitive inflection. It is possible to reconstruct in some detail how this arrangement has developed from a Dyirbal-type system. It has involved, among other things, a shift in conjugation membership for roots that were exceptions to the predominant conjugation–transitivity correlation – for instance, the intransitive *bungi-l* 'lie down' has been shifted to the entirely intransitive *y* conjugation (in one dialect of Warrgamay; it remains in the *l* class in the other dialect). See 13.4.2 and 13.6.1.

A similar situation is found in some other languages in Queensland, discussed in 13.4.1–2. This kind of realignment is partly syntactically motivated. By bringing conjugations into line with transitivity it does invest what was previously a useless complexity with syntactico-semantic force. What began as phonologically conditioned alternation (depending on the final segment of the pA verbal root) and then became simply a morphological burden – each speaker would have had to learn the conjugation of each verb, although this did not carry any semantic load – has now become a syntactically motivated distinction. Being able to infer the transitivity of a verb from the form of its inflection can be a considerable aid in processes of coordination, subordination and the like; this is discussed further in chapter 13.

12.2.7 *pA verbal roots in prefixing languages*

In 9.4.3 we described how the number of unanalysable verb roots from non-prefixing languages varies from over a thousand in eastern languages like Dyirbal (which have relatively little compounding) to about thirty in Gurindji (which has over a thousand compounds, each with a monomorphemic verb root as second element). Most prefixing languages appear to fit along this typological continuum, on the further side of Gurindji. There are generally only a dozen or two roots that can take verbal inflections; each verb will involve a non-inflecting element, together with one of this set of 'auxiliary' roots. In Gunwinygu, for instance, 'to pierce' is *-dulubu-*, 'to spear' is *-rraynbu-* and 'to sneeze' *-jidbu-*, all having as final element *-bu-*. In addition *-bu-* can be used on its own, without any prefixed element, as a full verb, and then means 'to strike, hit, kill'. In some prefixing languages a single non-inflecting element can occur with several different auxiliaries, the compound verbs formed having different semantic effects. For instance, in the North Kimberley language Ungarinyin, *debarr-* 'die' and *jari-* 'leave' can both occur with auxiliary *-a-*, indicating horizontal motion, and with *-wu-*, indicating action by agent on patient, thus *debarr -a-* 'die', *debarr -wu-* 'extinguish', *jari -a-* 'go away', *jari -wu-* 'abandon'.

A fair proportion of these 'auxiliary' roots appear to be reflexes of the pA monosyllabic roots we reconstructed in 12.2.2. Languages in the North Kimberley group, to the north-west of Gurindji, have around a dozen forms that can take verbal inflections; one of them must occur as the final element of each verb. There are clear cognates for *ŋu-* 'give', *bu-* 'hit', *ya-* 'go', *ma-* 'take', *ba-* 'fall' and *ma-* 'do'. Most of the auxiliaries in these languages can occur as stems in their own right, without any prefixed lexical element. The degree of semantic correlation between compound verb roots and the auxiliary element varies considerably. In Ungarinyin, for instance, *dadayj* 'to clothe' and *barruwi* 'to satisfy' both take as auxiliary *-ŋurlu* 'to give'; *darrag* 'to enter', *mardu* 'to walk', *jolij* 'to return' can all take *-a-* 'to come/go'. But we also find *goyij* 'to drink' and *nyirrijba* 'to sew' taking *-a-*. Consideration of verbs that take *-wa-* 'to fall' as auxiliary are suggestive of metaphorical connections – they include *lay* 'to like, desire' (cf. English *fall in love*), *wej* 'to sleep' (cf. *fall asleep*) and *maluŋoŋo* 'to echo' among others. Whether there is any true connection of meaning in these instances is uncertain in default of a detailed study of the semantic systems of the languages.

In some prefixing languages, the monosyllabic roots we have reconstructed occur with their regular conjugation markers. In Gunwinygu verbs can be classified according to their final syllable. There are about thirty final syllables attested, falling into thirteen conjugation classes; ten of them can function as complete verb stems in their own right. One conjugation consists of *-na-* 'to see', *-ga-* 'to take, bring, carry', *-wo-* 'to give' and *-ŋu-* 'to eat'; its conjugation marker is *ŋ*. The first three of these are plainly reflexes of pA *NHaa-ŋ*, *gaa-ŋ* and *ŋu-ŋ*. Gunwinygu has – like many other languages – lost the contrast between long and short vowels in initial syllables; there are other examples of the changes *NH,NY>n* and *DH,DY>d* (cf. 8.1); and both *o* and *u* in its five-vowel system appear to correspond to *u* in the pA three-vowel system. Gunwinygu also has *-bu-* 'strike, hit, kill' as one of the two final syllables for verbs of the *m* conjugation (the other is *-wa-*, which occurs only in compounds). Another conjugation, with marker *n*, includes *-ni-* 'to sit' and *-di-* 'to stand', and a related class has *-yo-* 'lie down'; these are close to pA *NYii-n* 'sit', *DHa(a?)-n* 'stand' and *ŋu(u?)-n*∼*yuu-n* 'lie down'.

Most of these monosyllabics also occur in Gunwinygu's neighbour Rembarrnga, and this also shows *-wa-* 'follow' and *-ru-* 'cry, weep' among the twenty-nine roots of its five closed verb classes (ten of them are monosyllabic and five of these ten are used to form compounds).

Mangarayi, one of the most structurally unusual of the prefixing languages, has a slightly different inflectional pattern for almost every one of its forty inflecting verbal roots; but these roots do include *ga-* 'take', *wu-* 'give', *bu-* 'hit', *ya-* 'go', *way*(*i*)- 'fall', *ma-* 'do, say', *ja-* 'eat', *rṇi-* 'sit' and *yu-* 'sleep'. Although Mangarayi maintains these pA monosyllabic forms, there is scarcely any hint of the expected conjugation markers; suffixes to *wu-* begin with *n* or *y*, those to *ya-* with *g*, *ŋ*, *ny* or *j*, although there is past punctilinear *-ŋiny* with *ga-* and *-b* with *bu-* (the latter possibly a reflection of original *-m*). It appears that Mangarayi has undergone considerable morphological and phonological changes, which have given rise to modern inflectional irregularities and also virtually eliminated all trace of the final segments of pA monosyllabic roots.

The similarity of critical verb roots and, in most cases (Mangarayi is unusual), their conjugation markers between prefixing and non-prefixing languages is the main evidence that they are related as one Australian language family.

We posited a fairly transparent agglutinative structure for pA. Languages outside the prefixing area have developed more nominal cases and verbal suffixes, moving slowly towards a more inflectional linguistic type. Languages in the central north have changed more radically, and in a different direction; they have little nominal inflection but often very complicated verbal structures. The occurrence of prefixes and suffixes for tense, aspect, person and number of subject and object, and so on, leads to long verbal words. There has been a tendency towards phonological contraction and the like, but this leads to complex morphological alternations: in some modern prefixing languages it is difficult to assign morpheme boundaries within verbal words.

This is the case for languages of the Daly River group (cf. 8.1), whose verbs are of considerable typological interest. In Malak-Malak, for instance, each verb consists of a 'root', that carries the lexical meaning, and an 'auxiliary', which inflects for person/number and tense/mood/aspect. There are six auxiliaries, one that must be used with all transitive roots and five that cover intransitives. Two of the intransitive auxiliaries can be glossed as 'move' with the others being 'sit', 'stand' and 'lie'. Sample inflected forms of the last three, for third person masculine singular subject and progressive aspect, are:

'sit' *yiniŋiny* 'stand' *yiyaŋiny* 'lie' *yöyöŋuny*

We can roughly segment off the 3 sg masc *yi-*~*yö-* prefix and the progressive *-ŋiny*~*-ŋuny* suffix (there is plainly some sort of assimilation of affix vowels to root vowel). The roots *-ni-* 'sit', *-ya-* 'stand' and *-yö-* 'lie' are surely related to pA *NYii-n*, *DHa*(*a*?)*-n* and *ŋu*(*u*?)*-*~*wu-n* respectively. It must, however, be stressed that we have chosen the three forms here rather carefully; other person–number combinations and suffix choices do not always yield so readily to segmentation. What is clear is that the underlying roots *-ni-*, *-ya-* and *-yö-* run through the many forms of these three auxiliaries.

Sister languages to Malak-Malak in the Daly River group have a larger set of auxiliaries. Maranunggu has eighteen roots – one for verbs of cutting, another for verbs of sensing, another for verbs of eating, drinking and dying, and so on. There are here further cognates to pA forms – for instance, the auxiliary for verbs of 'holding' is based on *-ma-* cf. pA *maa-n* 'to hold in the hand'. All Daly River group languages have auxiliaries relating to 'sit', 'stand' and 'lie' but in some cases phonological change has proceeded so far that it is not possible to recognise on inspection roots that are obviously cognate to the pA forms. There is urgent need for reconstruction of proto-Daly, and comparison of this with pA.

Examination of verb systems in prefixing languages can help to confirm some pA reconstructions. We mentioned that Dhuwala/Dhuwal has *ŋä-*(/*ŋaa*/) 'to hear' whose inflection is like that of *ŋ* class roots with some irregularities, and that *ŋarraa-ŋ* 'to hear' is an irregular verb in Gumbaynggir, spoken 2,000 miles away. In Ngandi, a prefixing language spoken just south of Dhuwala/Dhuwal there is a class of irregular verbs that comprises *-rna-* 'to see', *-wo-* 'to give' *-ŋu-* 'to eat' and also *-ŋa-* 'to hear'; in Rembarrnga, another prefixing language spoken to the west of Dhuwala/Dhuwal, one conjugation class consists just of *na-* 'see, perceive' and also *ŋawa-* 'hear'. It is also interesting to note that *-bu-* 'to hit' is the SOLE monomorphemic member of one class, whose inflections strongly feature an initial *-m-*, in the prefixing Ngandi and Gunwinygu, as it is in Dhuwala/Dhuwal and Nyawaygi (the two non-prefixing languages that do most clearly distinguish *ŋ* and *m* classes); the evidence is increasingly strong that *bu-* may have been the only monosyllabic verb root in proto-Australian that ended in *m*.

Not quite all nonPN languages show 'conjugation by a small set of auxiliary roots'. Maung, on Goulburn Island, has over 200 monomorphemic verbs – but they do include *-wu-* 'to hit' and *-ma-* 'to take' among the handful of monosyllabics. It seems that Maung has developed a greater number of simple verbs, in the way that some non-prefixing languages have, although the development has been entirely independent. Only in Tiwi, on Melville and Bathurst Islands, and Djingili (one of the southernmost nonPN languages) spoken on the Barkly Tableland, is it hard to find any correspondence with the verbal pattern reconstructed for pA. These are, accordingly, the languages whose genetic relation to the remainder of the languages of the continent still requires definite demonstration.

12.3 Grammaticisation of lexical roots

The languages of South Australia have diverged from the pA prototype more than any other languages outside the prefixing region. Some of them have, for instance, extremely complex pronominal systems where there can be a dozen different pronouns 'you and I' according as the speaker and addressee belong to the same or different moieties, the same or different generation levels, and so on (see 8.4, 9.3). Languages in this region have eliminated all conjugational contrasts; verbs of every type take identical forms of inflections. pA monosyllabic roots occur only as the occasional first (or last) syllable of a polysyllabic root.

A number of languages from this region (basically, those that have NOT evolved complex pronoun systems) have instituted a further development. There is a small set of verbal roots which when used with another verb provide a tense or aspectual specification of it; each of these 'auxiliary roots' can be used alone, and then carries a lexical meaning. In Diyari, for instance, Peter Austin reports that *wanhthi-* when used alone means 'to search for', as in:

(2) *ŋathu jukurru wanhthi+yi*
1sg+A kangaroo+ABS search for+PRES
'I'm searching for kangaroos.'

But it can also occur following a lexical verb, and then indicates 'distant past', as in:

(3) *ŋathu jukurru wayi+rna wanhthi+yi*
1sg+A kangaroo+ABS cook+PARTICIPLE DISTANT-PAST+PRES
'I cooked a kangaroo (a long time ago).'

Other 'auxiliary verbs' in Diyari are:

	LEXICAL MEANING WHEN USED AS MAIN VERB	SENSE WHEN USED AS AUXILIARY
wapa-	'to go'	intermediate past (e.g. two months ago)
parra-	'to lie' (used for non-animates)	recent past
wirri-	'to enter'	very recent past (between yesterday morning and this morning)
waɾa-	'to throw'	earlier today (between this morning and now)
ŋana-	'to be'	near to distant future

Note that in an auxiliary construction the lexical verb must bear the ending *-rna*~*-lha* while a regular tense inflection is added to the auxiliary root. Most auxiliaries can occur with only one of the tense inflections – interestingly, *wanhthi-*, *wirri-*, *wara-* and *ŋana-* select present tense *-yi* while *wapa-* and *parra-* are always followed by past *-ya*. (*wapa-* can also occur, as an auxiliary, with present *-yi* but then has quite different semantic effect, indicating habitual mood e.g. 'he lives in the dry country'.) See also (39)–(40) in 13.6.2.

The Diyari-type 'auxiliary verbs' – which are quite different in meaning, function and form from 'auxiliaries' found in northern languages – are plainly a very recent development. They are found in the languages of a continuous region in eastern South Australia, extending just into south-west Queensland.

12.4 Verbal derivational affixes

Between the obligatory root and inflection a verb can, optionally, include one or more derivational affixes. We mentioned, at the beginning of this chapter, that there are two varieties of verbal derivational suffix. One type provides semantic modification of the root, without affecting its syntactic class in any way. Most Australian languages have a few suffixes of this type e.g. 'continuous', 'completive', 'done quickly'. There is tremendous variation from language to language both as to meanings and to forms; it is unlikely that large-scale comparison would suggest many pA reconstructions for this category. The development of lexical roots to become aspect/tense markers in

Diyari and nearby languages, as described in the last section, is probably an example of the first step towards evolution of new verbal affixes (although in Diyari it appears to be a new inflectional system that is perhaps in genesis). Each individual language appears to have, in its own way, developed non-syntactic derivational affixes – probably from originally free-form adverbs or particles.

Almost all Australian languages – of both non-prefixing and prefixing types – also have some derivational suffixes that change the transitivity value of a verb. Three basic types can be distinguished:

[i] TRANSITIVISER. An affix that can only be added to an intransitive root, and which derives a transitive stem. The transitiviser in Yidiny was exemplified in (4)–(5) of 9.4.1; this has the form *-ŋa-l∼-l+maŋa-l∼-r+maŋa-l* according as the root to which it is attached belongs to the *n*, *l* or *r* class.

The syntactic relation between an underlying intransitive and a derived transitive sentence can vary – sometimes the original intransitive subject NP, S, becomes transitive object, O (we call this the S→O type); at other times S becomes transitive subject (S→A). In some languages (e.g. Dyirbal) derived transitive stems are all of type S→A. But in Yidiny *-ŋa-l∼-l+maŋ-l∼-r+maŋa-l* has S→O effect with verbs of a certain semantic type e.g. *bala-n* 'to be open' in (4)–(5) of 9.4.1, and also the intransitive *gunyji-n* 'to break':

(4) *jugi gunyji+iny*
stick+ABS break+PAST
'The stick broke.'

(5) *waguja+ŋgu jugi gunyji+ŋa+l+nyu*
man+ERG stick+ABS break+TRANSITIVISER+PAST
'The man broke the stick.'

This derivational affix has S→A syntactic effect with verbs of other semantic types e.g. *nyina-n* 'to sit':

(6) *waguuja nyina+ŋ*
man+ABS sit+PRES
'The man is sitting.'

(7) *waguja+ŋgu wagal nyina+ŋa+l*
man+ERG wife+ABS sit+TRANSITIVISER+PRES
'The man is sitting with [his] wife.'

Further discussion will be found in 13.3.1.

[ii] REFLEXIVE. An affix that can only be added to a transitive root, and derives an intransitive stem. A Yidiny example was given at (6)–(7) in 9.4.1 and a Dyirbal example at (19)–(20) of 10.2.

[iii] RECIPROCAL. This has the same syntactic effect as reflexive, deriving an intransitive stem from an underlying transitive root. Unlike reflexive, a reciprocal must have an S NP that refers to two or more participants. Thus, corresponding to (19)–(20) in 10.2 we can have the Dyirbal sentence:

(8) *bayi* *yara+rrji* *gunbal+gunbal+nbarri+nyu*
HE+ABS man+PLURAL+ABS cut+REDUP+RECIP+PRES
barri+ŋgu
axe+INST
'The men are cutting each other with axes.'

The reciprocal form of a transitive verb in Dyirbal is shown by reduplication of the root (when used outside reciprocals, reduplication indicates that an activity is done 'lots of times') and by adding the derivational affix *-nbarri-y*.

Reflexive and reciprocal verbs occur only in intransitive constructions – the single core NP is in S function and involves a noun in absolutive and/or a pronoun in nominative case (cf. 9.7). In some languages a single suffix is used for both reflexive and reciprocal – Yolŋu, Guugu Yimidhirr (see 13.3.2 below) and Bardi (a prefixing language from West Kimberley) are examples. If the S NP is singular the verb is taken to be reflexive; if S has plural reference then the verb will normally have a reciprocal sense. (There are a few languages in which the reflexive suffix to a verb has the same, or almost the same, form as the comitative derivational affix 'with' onto a nominal. In Yidiny nominal comitative is *-ji*~*-yi* (examples were given in 10.4) and reflexive is *-Vji-n* (see 9.4.1). In Dhuwala/Dhuwal the reflexive–reciprocal verbal suffix is *-mi* (which takes future inflection *-rri*) and the 'having' suffix on nouns is *-mi* in some dialects, *-mirri* in others. In Thargari and Yinggarda both reciprocal suffix to verbs and comitative suffix to nouns have the form *-parri*. Interestingly, in Rembarrnga verbal reflexive–reciprocal is *-ttə*, identical to the privative suffix ('without') on nominals. The significance of these correspondences is not at present understood; indeed, they may be quite accidental.)

In many languages the verbal affix which signals reflexive can also have a wider syntactic effect, being used also to mark an 'antipassive' construction. This is an intransitive sentence-type, derived from an underlying transitive structure; the deep A NP goes into surface S function while the deep O NP takes a peripheral case. Discussion of antipassives will be found in chapter 13.

There are a few languages, scattered over the continent, that do not have any reflexive (or reciprocal) verbal affix. Instead, a reflexive construction can involve a special reflexive form of the appropriate pronoun, rather like in English (e.g. *he cut himself*). In Gumbaynggir, reflexive is shown by a regular transitive sentence with A and O NPs that have identical reference; the reflexive marker *-w* may optionally be added to a third person O pronoun in such a sentence:

(9) *gulaa+du buurrwa+ŋ gulaa+na+w magay+u*
3sg+A paint+PAST 3sg+O+REFL red-paint+INST
'He painted himself with red paint.'

In Western Desert there is a special bound clitic that signals reflexive or reciprocal (the choice effectively depends on the number of the S NP). Compare (2)–(3) in 11.3 with the reflexive sentence:

(10) *pu+ngu+rna+tju watarrku(+ngku)*
hit+PAST+1sgSUBJ+REFL oblivious(+ERG)
'I hit myself, inadvertently.'

Here the regular 1 sg subject clitic *-rna* is followed by a reflexive clitic; this has the form *-tju* with a 1 sg subject and *-nku* for all other person/number combinations.

Virtually every Australian language also has derivational suffixes for forming verbal stems from nominal (noun or adjective) roots (much as in English we derive *redden*, *widen* from *red*, *wide*, and so on). There are generally two affixes of this type:

[iv] INCHOATIVE. When added to a nominal root or stem this derives an intransitive verbal stem; it can often be glossed 'become'. The form in Warrgamay is *-mbi-y* following a vowel and *-bi-y* after a nasal consonant; it was exemplified in (2) of chapter 9.

[v] CAUSATIVE. When added to a nominal root or stem, this derives a

transitive verbal stem; it can often be glossed 'make' or 'cause'. The form is *-ma-l* in Warrgamay e.g.

(11) *maal+du ŋulmburu gunga+ma+l+ma*
man+ERG woman+ABS healthy+CAUSATIVE+FUT
'The man will make the woman better (i.e. will cure her).'

Any type of nominal is 'at risk' to be verbalised. Thus in a Warrgamay myth, describing how dreamtime people were turned into different sorts of animal and bird, *warujala+mbi+gi* 'black wallaby+INCHOATIVE+PERFECT' is used to describe how two men 'became black wallabies'. Overall, though, adjectives are encountered in verbalised form in texts much more frequently than nouns; this is one of the statistical tendencies which supports what must often be primarily a semantic division of the nominal class into nouns and adjectives (see 9.2.2).

In many languages the transitiviser onto intransitive stem, [i], has the same or similar form to the causative suffix onto nominals, [v]. This is the case in Yidiny where both have the basic form *-ŋa-l*, and in Warrgamay where both are *-ma-l*. Compare (11) with:

(12) *maal+du ŋulmburu gaga+ma+l+ma*
man+ERG woman+ABS go+TRANSITIVISER+FUT
'The man will take the woman (with him).'

Both *-ŋa-l* and *-ma-l* occur quite widely as transitive verbalisers, onto intransitive roots and onto nominals. It is worth speculating whether there is any genetic connection with the monosyllabic verbs **ma-l* and **ŋa-l* that were reconstructed for pA in 12.2.2.

Each derivational affix forms a stem that belongs to a certain conjugation. Generally, suffixes of types [i] and [v] – which derive transitive stems – will belong to the open transitive conjugation (this is the *l* class in both Yidiny and Warrgamay) while affixes [ii]–[iv] – that derive intransitive stems – belong to the open intransitive conjugation (the *y* class). In most languages there is a statistical correspondence, NOT a coincidence, between transitivity and conjugations so that exceptions to this generalisation are encountered. In Dyirbal, for instance, the inchoative suffix *-bi-l* belongs to the *l* class, 80 per cent of whose members are transitive. (Note that the cognate suffix *-bi-y*~*-mbi-y* in Warrgamay has been transferred to the open *y* class. We mentioned under type [8] in 12.2.6 that Warrgamay is one of the very few languages that has restructured conjugations so that they now EXACTLY coincide with transitivity classes.) The intransitive verbaliser *-ma-l* in Guugu Yimidhirr was mentioned in 12.2.1.

We stated at the beginning of this chapter that in most Australian languages the verbal root is never used alone; whereas a nominal root will be employed in its bare form for S and O functions, a verb will always have a non-zero tense-type inflection. The recognition of a verbal root is then an analytic step; we cannot be certain that the form we recognise has any psychological validity for a speaker of the language.

This is probably at least part of the reason why Australian languages accept loans from English or other non-Australian tongues as nouns or adjectives but not usually as verbs. In Dyirbal, for instance, we find nouns *mani* 'money' *juwa* 'saw' and *gawun* 'dress, gown' but only adjectives *majirrim* 'mustering' and *wagi* 'working' from the English verbs *muster* and *work*. These words can then be verbalised by inchoative and causative suffixes; indeed, they are almost exclusively encountered in verbalised form, as transitive *majirrim+ba-l* 'to muster' and intransitive *wagi+bi-l* 'to work'. The form of an English verb, when represented in terms of Dyirbal phonotactics, does not consistently correspond to any particular inflected form of a Dyirbal verb. The solution is to take over the loan as an adjective – whose absolutive form can have any final syllable – and make a verbal stem from this by means of the productive morphological processes available in the language.

12.5 Nominal incorporation

There is one further complexity of verbal structure that should be noted. A group of quite diverse prefixing languages in Arnhem Land can incorporate a nominal root within a verbal word, generally between prefixes and verbal root. Only a smallish set of nominals can be incorporated in any language. In Rembarrnga, for instance, the hundred or so incorporable roots refer mainly to body parts and geographical features; an incorporated nominal is understood to be in S (intransitive subject) or O (transitive object) function in the sentence. Thus in Rembarrnga one can say:

(13) *tiŋʔ* *paŋa+warnrta+na+ϕ*
woman PREFIX+track+see+PAST-PUNCT
'I saw the women's track.'

The portmanteau prefix *paŋa-* – which precedes the incorporated nominal *warnrta* 'track' – indicates a first person 'minimal' A and a third person 'augmented' deep O, referring to 'women' (for 'minimal' and 'augmented' see 11.1.6). The verb root *-na-* is cognate with pA **NHaa-ŋ* 'to see'; past punctilinear has the realisation *ϕ* with this verb (but it has non-zero realisation for all but one of the other sixteen conjugational classes). The corresponding sentence without nominal incorporation into the verbal word would be:

(14) *tiŋʔ* *warnrta + parrə·ŋa + na + ϕ*
woman track + THEIR PREFIX + see + PAST-PUNCT
'I saw the women's track.'

The prefix here indicates first person minimal A, and third person minimal O, referring to 'track' (cf. example quoted on page 1, and discussed in 8.1).

Tiwi, from Melville and Bathurst Islands, has around one hundred nominals that can be incorporated, but in this language most of the incorporated forms are quite different from the semantically correspondent free forms e.g.

incorporated form	free form	
-maŋu-	*kukuni*	'fresh water'
-ki-	*yikwani*	'fire'
-kəri-	*yikara*	'hand'

Some forms have evidently undergone phonological reduction after gaining the status of bound incorporated morphemes, while the corresponding free nominal has maintained its form; in other cases the bound form may continue an original free form while taboo and replacement have established an entirely new form as the independent nominal.

13

Syntax

13.1 Basic syntactic functions

The category 'subject of a sentence' has to be defined and used with great care in Australian languages, because of their ergative characteristics (see 9.7). The notion of 'subject' evolved in the context of the study of the major languages of Europe, where certain semantic and certain grammatical properties coincide to provide a two-faced definition. The subject of a sentence is that NP whose referent COULD BE the 'agent', which initiates and controls the activity; and the subject is normally obligatory in a sentence, receives the unmarked case, and so on. For ergative languages these semantic and grammatical criteria do not coincide.

It is most satisfactory, in any discussion of Australian morphology, syntax and semantics, to work directly in terms of the three universal, basic syntactico-semantic functions – S, A and O (9.7). An intransitive sentence has one core NP, which is said to be in S function. A transitive sentence has two core NPs – that whose referent could initiate or control the activity (if anything could) is said to be in A function, while the other NP is in O function. Some linguists have emphasised semantic criteria and taken A and S as constituting the subject category in ergative languages; there are then severe difficulties in relating all grammatical processes to this semantically defined subject. Others take the syntactic/morphological criteria as basic and then say that S and O constitute 'subject'; this is bound to complicate any attempt at providing semantic interpretation for the grammar. In fact, as we remarked in 9.7, most Australian languages have one case linking S and A for pronouns, but with nouns a single case covers S and O functions; this would make it hard to define any consistent category of 'subject' on purely grammatical grounds.

The discussion of this chapter will refer directly to S, A and O

Table 13.1

	'man'	'dog'	masculine determiner	feminine determiner	'we all'	'you all'
A	*yara+ŋgu*	*guda+ŋgu*	*ba+ŋgu+l*	*ba+ŋgu+n*	*ŋana*	*nyurra*
S	*yara*	*guda*	*bayi*	*bala+n*		
O					*ŋana+na*	*nyurra+na*

functions. Various syntactic operations may derive a surface structure which is of a different type from the underlying structure of a sentence. For instance, a transitive structure which has identical underlying A and O NPs must, in many languages, be expressed through an intransitive surface construction, with the S NP expressing underlying A=O, and the verb showing a reflexive marker.

This can be illustrated from Dyirbal. Here, as in Warrgamay (see 9.7), pronouns inflect on a nominative–accusative, and determiners and nouns on an absolutive–ergative pattern as in table 13.1. The function of an NP in a sentence can be unequivocally inferred from the alternation of nominal and pronominal possibilities. If the NP can be either a noun with ergative inflection, *-ŋgu*, or a pronoun with zero inflection (nominative case), then it is in A function; a noun in zero inflection (absolutive case) alternating with a pronoun marked by accusative suffix *-na* indicates O function; and a noun in zero inflection alternating with a pronoun in zero inflection signifies S function. Simple transitive sentences, with A and O NPs, are:

(1) *bala+n guda ba+ŋgu+l yara+ŋgu bura+n*
'The man saw the dog.'

(2) *ŋana nyurra+na bura+n*
'We all saw you all.'

(3) *nyurra+na yara+ŋgu bura+n*
'The man saw you all.'

If, however, A and O NPs have identical reference, they are in Dyirbal both mapped on to an S NP in surface structure, and the verb bears the reflexive affix *-yirri-y*, marking it as derived intransitive:

(4) *bayi yara bura+yirri+nyu*
'The man saw himself (e.g. his reflection in the water).'

(5) *ŋana bura+yirri+nyu*
'We all saw ourselves.'

Transitive root *bura-l*, which belongs to the predominantly transitive *l* conjugation, takes past inflection *-n*, while the derived intransitive stem *bura+yirri+y* is classed with the predominantly intransitive *y* conjugation and takes past tense allomorph *-nyu*. See also (19)–(20) in 10.2.

We will give examples below of other syntactic derivations, which change the functional status of core NPs. The important anti-passive derivation, described in 13.3.2, puts an underlying A NP into surface S function, while (in Dyirbal) marking the underlying O NP with dative inflection. The point to stress here is that a certain NP can fulfil one functional slot in underlying structure, but be shifted to a quite different derived function in surface structure (just as in English it is said that *the boys* is deep object but surface subject for *the boys were hit by the girls*).

We reserve the term 'subject' to refer to S and A functions in underlying structure; this is an entirely semantic definition, linking together the sole core NP in an intransitive sentence with that NP in a transitive sentence whose referent has the potentiality of initiating and/or controlling the activity (if anything has). The category of subject, defined in this way, does have universal validity; and certain universal syntactic phenomena follow from it. An imperative sentence, for instance, involves the speaker requesting the addressee to DO something; in every language an imperative must, in the deep structure, have an underlying second person S or A NP. A further example involves jussive constructions, complex sentences that have a main clause involving a verb like *tell* or *order* e.g. *I told him to return*, *she ordered me to eat up the meat*. Here the object of the main clause must be, at the level of deep structure, coreferential with the S or A NP in the subordinate clause. The subordinate clause describes an instruction that has been given to someone to do something – plainly this participant must be agent, and thus subject, for the subordinate clause.

Syntactic phenomena like imperatives and jussives have universal semantic effect and involve an identification of underlying S and A – which we group together as the category of 'subject' – in all languages. It is important to distinguish these from syntactic operations of coordination and subordination. The latter can operate in quite different ways in different languages; moreover, they can work in terms of DERIVED S, A and O functions, whereas an imperative refers only to underlying functions.

Some Australian languages treat (derived) S and O functions in the same way for operations of coordination and subordination, while others equate (derived) S and A; a number of languages mix these two, with S/O for certain operations and S/A for others. We can talk of languages with an S/O pivot, those with an S/A pivot, and those with both; further discussion and exemplification is given in 13.6. The important point to note here is that it is always necessary to work in terms of the three basic functions, S, A and O. 'Subject' is defined as a semantically based category, linking underlying S and A; in the context of Australian languages 'subject' is not valid as a surface structure category, for talking about language-particular operations such as coordination and subordination (to attempt to bring 'subject' into such discussion leads to considerable confusion and difficulty).

13.2 Order of constituents

All Australian languages have obligatory case marking on noun phrases and/or extensive cross-referencing of core NPs in the verb. This provides clear identification of subject and object in all (or, for some languages with only cross-referencing, in very nearly all) sentences.

The order of words and phrases can, in most Australian languages, be extraordinarily free; it has little or no grammatical significance. A preferred order can usually be perceived; this may be employed in systematic elicitation, or in a discourse when ambiguity might otherwise result. But there can be unlimited deviation from this preferred order, dictated partly by discourse considerations ('topic', and the like) and partly by the whim of the speaker. Even when a preferred order is adhered to most of the time, this is still a phenomenon of a quite different nature from word order in English or French, where it is the main or only marker of syntactic function; there is always the chance of any sentence in an Australian language departing radically from the underlying order, with no loss of communicative content or chance of ambiguity. In some languages different ordering possibilities appear to be equally common – subject may precede object as frequently as it follows it – so that it has not yet proved possible to detect any 'underlying order'.

For languages that do have a preferred order of phrases within a sentence this is almost invariably S NP followed by V[erb] for intransitive, and A, O, V for transitive clauses; in just a sprinkling of northern languages (Alawa, Yiwaja and Tiwi, for instance) SV is coupled with AVO. The outstanding oddity is Gumbaynggir, from north-east New South Wales, where AOV and VS are the most frequent orders within texts (but, in elicitation, the last speaker prefers AVO and SV, quite probably reflecting the word order in questions put to him in English).

Dyirbal is like many other Australian languages in having nominative(SA)–accusative(O) morphology for pronouns but an absolutive(SO)–ergative(A) paradigm for nouns. Here a nominative will tend to precede an accusative pronoun (AOV), as in (2), but an absolutive noun will usually come before an ergative noun (OAV), as in (1). If one of subject and object is nominal and the other pronominal then the pronoun is most likely to come first – AOV for 'we saw the man' but OAV for 'the man saw us', as (3). In other languages with mixed morphologies AOV seems to be the preferred order, for pronouns and for nouns, although – as in Dyirbal – there can be great deviation from this. There is in most languages a tendency for free-form pronominals, in whatever function, to come early in the sentence. Interrogatives are preferred in sentence-initial position, but in most Australian languages they can also occur in any non-initial position.

Of the remaining sentential constituents, peripheral syntactic NPs such as dative and instrumental tend to occur close to the verb, either immediately before or – most often – straight after it. Local NPs will usually follow the verb. Time qualifiers are most frequently found as the first element in a sentence, although, like other constituents, they can occur at other positions. The strictest constraints often involve particles like 'not', 'perhaps', 'try' and the like (9.5.3); in some languages these MUST occur before the verb.

Within NPs it is most common for a possessive qualifier to precede and an adjective to follow the head noun. If the phrase includes both generic and specific nouns (9.2.1) the generic noun most often comes first. Again, there can be wide variation from these orders. It is also important to stress that not only can words occur in any order in a phrase and phrases in any order in a sentence, in addition words from different phrases may be freely scattered through a sentence – see the discussion at the beginning of chapter 9, and sentences (1) and (3) there.

In Kuuku-Yaʔu, from far North Queensland, the ergative inflection *-lu~-Vlu~-ʔV* (where V is a repeat of the stem-final vowel) usually occurs on just the final word of an NP in A function. It can, however, be omitted, the A NP being identified only by its initial position – before O and V – in the sentence. This may be an example of word order becoming more rigid, and beginning to take over the role of syntactic identification that had previously been handled by case inflections; the next step would be for the ergative inflection to drop altogether. It is interesting to speculate as to whether this development may possibly have been influenced by intensive contact with English, which is fast replacing Kuuku-Yaˀu as the first language of this tribe.

13.3 Clausal derivations

We have already stressed that each verbal stem in an Australian language is either strictly intransitive – taking an S NP – or else strictly transitive – occurring with A and O NPs (9.4.1, 12.1). There are, however, usually grammatical processes for deriving a transitive stem from an intransitive root, and vice versa. The important point to note is that this type of derivation is almost invariably marked by an explicit verbal affix e.g. Yidiny *bala-n* 'be open' (intransitive root) and *bala+ŋa-l* 'make open' (derived transitive stem) in (4)–(5) of 9.4.1.

13.3.1 *Transitivising processes*

In 12.4 the transitivising suffix *-ŋa-l* in Yidiny was briefly described. The S NP for the intransitive root can become A or O NP of the derived transitive construction, depending on the semantic content of the root. With verbs like 'cry', 'laugh', 'be frightened of', 'speak', 'go', 'come', 'stand' and 'lie' the transitivising affix has S→A effect – 'cry'→'cry over'; 'sit'→'sit with'; as in (6)–(7) of 12.4 With verbs like 'fall down', 'break', 'open' and 'vomit' the affix has S→O effect – examples were given at (4)–(5) in 9.4.1 and also (4)–(5) in 12.4.

Rembarrnga, from Arnhem Land, has a transitivising suffix *-wa-* with a similar split semantic effect – S→A with some verb roots and S→O with others. But in Rembarrnga the sense of *-wa-* depends on the verbal conjugation of the root to which it is attached; verbs from two conjugations show an S→A effect (*karluk-* 'play', *karluk+wa-* 'play with'; *wak-* 'laugh', *wak+wa* 'laugh at' etc.) while those from the other three conjugations have S→O effect (*pariŋanə-* 'be hanging up', *pariŋanə+ʔ+wa-* 'hang [it] up' etc.). The sense in which *-wa-* was understood with any particular root may originally have been semantically conditioned (MOST verbs in the S→A conjugations are concerned with motion and rest, for instance) but is now grammatically constrained, by the conjugational membership of the root. Even verbs in one of the S→O conjugations that belong to a semantic area far removed from 'motion' and 'rest' still take the S→O sense of *-wa-* (e.g. 'yawn'→'make yawn'; compare with 'laugh', which belongs to an S→A conjugation and whose *-wa-* form means 'laugh at').

Most Australian languages have a verbal transitiviser with more straightforward syntactic effect. In Dyirbal, for instance, the suffix *-ma-l*~*-mba-l* invariably has S→A effect:

(6) *bayi yara bani+nyu*
'The man is coming.'

(7) *balan guda baŋgul yara+ŋgu bani+ma+n*
'The man is coming with the dog.'

This Dyirbal suffix can also be added to a transitive root that takes an instrumental NP. The instrumental NP will in an ordinary transitive sentence be marked by a case inflection that has identical form to ergative – see (19) in 10.2. When *-ma-l*~*-mba-l* is added to the root, the instrumental NP goes into absolutive case, the O NP is marked by dative, and the A NP retains its ergative inflection. Thus (cf. (19) from 10.2) corresponding to:

(8) *bala yugu baŋgul yara+ŋgu gunba+n*
IT+ABS tree+ABS HE+ERG man+ERG cut+PAST
baŋgu barri+ŋgu
IT+INST axe+INST
'The man cut the tree with an axe.'

we can have, with the derived verbal stem *gunba+l+ma-l*:

(9) *bala barri baŋgul yara+ŋgu gunba+l+ma+n*
IT+ABS axe+ABS HE+ERG man+ERG cut+*ma*+PAST
bagu yugu+gu
IT+DAT tree+DAT
'The man used an axe to cut the tree.'

Constructions like (9), with the instrumental NP in derived O function (marked by absolutive case), are needed to satisfy the syntactic constraints on coordination and subordination in Dyirbal. We return to this in 13.6.

As we have already mentioned, the suffix which forms transitive verbal stems from intransitive roots sometimes has similar or identical form to the affix which forms transitive verbal stems from adjectives and nouns e.g. 'small'→'make small(er)' – see 12.4; for instance, the denominal transitive verbaliser is *-ŋa-l* in Yidiny, *-ma-l*~*-(m)ba-l* in Dyirbal, and *-wa-* in Rembarrnga.

Northern languages with bound pronominal affixes can sometimes take a derivational affix that will alter which NPs are cross-referenced by the verbal word. In Rembarrnga a normal transitive sentence will have a portmanteau prefix indicating the person and number of subject and object (cf. 11.3), as in:

(10) *nulʔ* *parr+tjirtmi+ya* *ŋinta+kan*
swag+ABS PREFIX+steal+PAST-PUNCT I+DAT
'They stole the swag from me.'

Here prefix *parr-* indicates a third person minimal O and third person augmented A (for 'minimal' and 'augmented' see 11.1.6). The dative suffix *-kan* covers a wide semantic range e.g. 'we went hunting FOR KANGAROOS', 'we were dying OF HUNGER', 'the children played far FROM THE HUTS'. It is not, in sentences like (10), cross-referenced in the verb. However, if the prefix *-pak-* is added between pronominal prefix and verbal stem, then the pronominal prefix must cross-reference A and DATIVE (rather than A and O). The following construction with *-pak-* has the same meaning as (10):

(11) *nulʔ ŋanpa+pak+tjirtmi+ya*

The prefix *ŋanpa-* in (11) refers to first person minimal DATIVE and third person augmented A NPs.

13.3.2 *Antipassive and other intransitivising processes*

The familiar languages of Europe make much use of a passive construction. This has to be employed whenever the agent of some activity is not to be specified. Whereas an O NP can be deleted with certain English verbs (*I've eaten lunch*→*I've eaten*) an S or A NP can never be left out; but the *by*-phrase in a passive sentence – corresponding to deep A NP – can always be omitted (*something/one kicked John→John was kicked by something/one→John was kicked*). Passive must also be used if we wish to coordinate two clauses which share a common NP, where the common NP is in O function in the second clause, and to delete the second occurrence of this common NP (*John went into the stable and was kicked by the horse*). The main effect of passive is to take the underlying O NP, and put it in derived S function in surface structure. In strongly nominative–accusative languages, like English, only an NP in S or A function can be deleted within a coordinate construction, and so on.

Australian languages differ from the familiar European model in that it is the O NP which is in unmarked case within a transitive sentence; a nominal O NP will be in absolutive case, which normally has zero realisation. In some, but by no means all, Australian languages operations of coordination and subordination take S/O as 'pivot' categories, whereas English and similar languages take S/A as syntactic pivot (there is further discussion of this in 13.6). It is natural that languages of this type should have a syntactic process something like passive, except that it takes the underlying A NP (which would otherwise be in ergative case) and puts it in derived S function (absolutive case); this process is called 'antipassive'. It can be compared with passive in Latin, say, which takes the underlying O NP (otherwise marked with accusative case) and puts it in derived S function (shown by the unmarked nominative case).

The antipassive derivation has the following form in Dyirbal:

(12)	NP_1	NP_2	V+tense⇒	NP_2	V+*ŋa-y*+tense	NP_1
	O	A		S		DATIVE

The underlying A NP goes into S function; the deep O NP is now marked by the peripheral syntactic case, dative, and the construction is marked as antipassive by the inclusion of the derivational suffix *-ŋa-y* between verb root and tense. There are a number of grammatical tests by which it is possible to show that an antipassive sentence is intransitive, with just one core NP, in S function. (Words in a Dyirbal sentence can occur in any order; we give the preferred order here.)

Thus, a Dyirbal sentence like (8) can be recast in antipassive form as:

(13)	*bayi*	*yara*	*gunba+l+ŋa+nyu*	*bagu*
	HE+ABS	man+ABS	cut+ANTIPASS+PAST	IT+DAT

yugu+gu baŋgu barri+ŋgu
tree+DAT IT+INST axe+INST
'The man was cutting the tree with an axe.'

Note that peripheral constituents are carried over unchanged into an antipassive sentence – the antipassive replaces ergative inflection by absolutive on the underlying A NP 'the man', but does not affect the instrumental inflection of 'the axe' (this shows that ergative and instrumental are distinct cases, which simply happen to have the same formal realisation – see also 10.2).

An antipassive in Dyirbal is, like passive in English, a 'marked' construction and is used only in certain particular circumstances. Firstly, we can note that although an ergative (A) NP can be deleted from a Dyirbal sentence, there must be a stated S or O NP. If we wish to specify the agent but not the patient for some activity this can only be done through an antipassive construction – *bala yugu* cannot be omitted from (8) but *bagu yugugu* may be freely deleted from (13), giving the grammatical Dyirbal sentence:

(14) *bayi yara gunbalŋanyu (baŋgu barriŋgu)*
'The man was cutting (with an axe).'

Secondly, the demonstrative determiner in Dyirbal, *giyi*∼*ginya* 'this', occurs only in absolutive case form (filling S and O functional slots). If we wish to qualify an underlying A NP as 'this' it must be placed in derived S function, by the antipassive transformation, e.g.

(15) *giyi yara gunbalŋanyu (bagu yugugu) (baŋgu barriŋgu)*
'This man was cutting (the tree) (with an axe).'

The third and most important reason for the antipassive construction concerns the requirement that subordinate and coordinate constructions in Dyirbal must show a common NP that is in S or O function in each clause. We return to this in 13.6.

There are other derivational processes which, like antipassive, derive an intransitive verbal stem from an underlying transitive root. The Dyirbal reflexive was exemplified in (4)–(5) above and (19)–(20) of 10.2. This involves the derivational suffix *-yirri-y*, which probably relates to an original suffix **-DHirri-y* in pA, or some early descendant of pA. Many other languages in the eastern and central parts of the continent show suffixes that are reflexes of **-DHirri-y*, and have a basic intransitivising function (although with a fair range of different semantic effects).

In Yidiny there is a verbal derivational affix *-Vji-n* (< **-DHirri-y*), which covers the syntactico-semantic range of both *-ŋa-y* and *yirri-y* in Dyirbal, and more besides. Basically, a verb is marked by *-Vji-n* (i) whenever the controlling agent of the activity referred to by a transitive verb is not in ergative case – i.e. in antipassive and reflexive constructions, in which the verb has derived intransitive status, and the agent is in derived S function; or (ii) whenever the participant referred to by the A NP, in ergative case, does not control the activity – this covers inanimate agents ('the bramble pierced my skin') and human agents who achieve some result fortuitously ('I found that lake by accident') in constructions which remain transitive. Sentence (7) in 9.4.1 shows *-Vji-n* in an antipassive construction from which the deep O NP has been deleted (it could be included, and would be in locative or dative case within the Yidiny antipassive construction); another example is at (37) in 13.6.1.

The verbal suffix *-Vdhi* in Guugu Yimidhirr is another descendant of **-DHirri-y*. It covers almost exactly the same range as *-Vji-n* in Yidiny, except that there appears to be no antipassive sense. Unlike Dyirbal and Yidiny, Guugu Yimidhirr does not show a predominantly S/O pivot for complex sentence constructions, and has less need of an antipassive construction type. In the next sections we discuss *-yi* in Kalkatungu and *-yi* in Lardil, which are probably further reflexes of **-DHirri-y*, and have related semantic effects.

Many Australian languages have a further intransitivising process – the formation of reciprocals. The reciprocal suffix *-nbarri-y* in Dyirbal was illustrated in (8) of 12.4. Not infrequently, the same verbal derivational suffix may be used to form both reflexives and reciprocals (see 12.4). This is so in Guugu Yimidhirr, for instance – if the S NP of a sentence with a *-Vdhi* is plural the sentence will normally be interpreted as reciprocal, and if the S NP is singular it will be taken to be reflexive (there are also other factors – if the verb is reduplicated then reciprocal interpretation is most likely; and the addition of the emphatic suffix *-Vgu* to the S NP favours a reflexive reading). Interestingly, the verbal suffix *-Vji-n* in Yidiny CANNOT have a reciprocal sense.

Not all Australian languages form intransitive reflexive or reciprocal constructions by a derivational suffix to the verb. In 12.4 we gave exemplification of languages which employ special reflexive–reciprocal forms of pronouns, within a regular transitive sentence.

13.3.3 *Other processes*

In chapter 12 we mentioned that most (or all) Australian languages also have some verbal derivational suffixes that just provide semantic modification to a verb, and do not affect transitivity – 'start to do', 'continue doing', 'do quickly', and so on. In a few languages a rather similar semantic modification can be obtained not by adding any affix to the verb but simply by varying the case assignment to NPs in the sentence.

In Warlpiri, for instance, if the O NP of a transitive sentence is placed in dative case (rather than the normal absolutive) this indicates 'that the action denoted by the verb is not fully carried out, in the sense that it does not have the intended effect on the entity denoted by the object'. Compare:

(16) *nyuntulu+rlu ϕ+npa+ju pantu+rnu ngaju*
you+ERG ϕ+2sgA+1sgO spear+PAST I+ABS
'You speared me.'

(17) *nyuntulu+rlu ϕ+npa+ju+rla pantu+rnu ngaju+ku*
you+ERG ϕ+2sgA+1sgDAT spear+PAST I+DAT
'You speared at me; you tried to spear me.'

(The final suffix *-rla* on the auxiliary in (17) is a marker of this construction-type, i.e. it indicates that it is A and dative NPs, not A and O, that are being cross-referenced.)

However, constructions like (17) are not found in the majority of Australian languages, simply because most languages demand that each sentence MUST include an NP in S or O function (generally marked by absolutive case).

13.4 **Types of syntactic change**

13.4.1 *Specialisation of antipassive construction*

The antipassive in Dyirbal has a purely syntactic role. A regular transitive sentence and its antipassive correspondent – for instance, (8) and (13) – have the same basic meaning and differ only in emphasis, rather like an active and its corresponding passive in English. In other languages antipassives can also carry a significant semantic load.

In Kalkatungu, for instance, transitive verbs can occur in either of two constructions, reminiscent of Dyirbal. Indicating underlying functions by subscripts A and O, these involve the following case markings:

(i) NP_A + ERG NP_O + ABS V + inflection
(ii) NP_A + ABS NP_O + DAT V(+*yi*) + inflection

Construction (ii) appears to be an antipassive with the deep A NP in derived S function, marked by absolutive case, and the deep O NP taking the peripheral syntactic case, dative. The verbal marker *-yi-* may well be a reflex of **-DHirri-y*, cognate with Guugu Yimidhirr *-Vdhi-*, Yidiny *-Vji-* and Dyirbal *-yirri-y*. But *-yi-* is only included on the verb for a construction of type (ii) in certain circumstances; otherwise, the verb in (ii) shows no special derivational affix.

Constructions of type (ii) appear firstly to fulfil a syntactic role. If the A NP in a transitive subordinate clause is coreferential with either S or O NP of the main clause then the subordinate clause must obligatorily be in construction type (ii); and here the antipassive marker *-yi-* must be included on the subordinate clause verb. Thus:

(18) *ŋa+dhu lhayi yurru nhidha+yi+nyin*
I+ERG hit+PRES man+ABS steal+*yi*+SUBORD
yalgabari+i
boomerang+DAT
'I hit the man who was stealing the boomerang.'

'The man' is underlying A NP for the subordinate clause; when this is put into antipassive form it goes into derived S function, marked by absolutive case (the same case that marks 'the man' in the main clause) and this occurrence is omitted from the second clause. 'The boomerang', which is in underlying O function, is placed in dative case within the antipassive subordinate clause.

Secondly, a main clause can be cast into antipassive form when referring to an activity that is extended over a period of time. With future tense the antipassive marker *-yi-* is included, as it is in subordinate clauses. Compare the straightforward future:

(19) *gundu ŋa+dhu lha+mi*
NOT I+ERG hit+FUT
'I'm not going to hit [him].'

with an antipassive construction, referring to the continuation of some present activity into the future:

(20) *gundu ŋayi lha+yi+mi gurlugurlu*
NOT I+ABS hit+*yi*+FUT again
'I'm not going to hit [him] again.'

With non-future inflection, a main clause can occur in construction (i) or (ii) with the same sort of semantic contrast – (i) refers to an action directed towards a specific goal, while (ii) refers to some (often, uncompleted) activity that the subject is or was engaged in. The only difference is that in these circumstances construction type (ii) does not involve the derivational affix *-yi-*. Thus:

(21) *mardu+yu dhuyi wagari*
mother+ERG cook+PRES fish+ABS
'Mother is cooking (a specific) fish.'

(22) *mardu (maa+ji) dhuyi*
mother+ABS (food+DAT) cook+PRES
'Mother is cooking (food).'

Turning now to Pitta-Pitta, spoken just to the south of Kalkatungu (but not closely genetically related to it), we find a rather unusual morphological system with different sets of core case suffixes for the future and non-future (so that it looks at first blush as if nominal inflections indicate case and tense – 10.2). In fact, transitive clauses in non-future tenses show the regular Australian pattern, with ergative *-lu* for A function, accusative *-nha* for O, and absolutive, with zero realisation, for S function; there is also a full complement of peripheral cases – dative *-gu*, locative *-yina*, and so on. But in future clauses both S and A NPs show inflection *-ŋu*, with O being marked by *-gu* (identical to the dative inflection).

Comparison with Kalkatungu suggests an historical explanation. It may well be that an earlier stage of Pitta-Pitta had a productive contrast between antipassive and regular transitive constructions in future (and probably other) tenses. But this then polarised, with the antipassive just being used in future tense, and used obligatorily there. This would explain why the deep O NP takes dative marking in a future clause; but it does not, unfortunately, throw any light on why the A and S NPs in a future construction should take *-ŋu* (when in non-future clauses S is *-ϕ* and A *-lu*).

Future forms of verbs do not bear any trace of a fossilised antipassive suffix, perhaps related to **-DHirri-*, which would provide support for this historical hypothesis. But Pitta-Pitta does have a very simple morphology, with a single form for each morpheme (all roots, affixes and words end in a vowel – see 6.6.1); it has plainly eliminated many morphological complexities that must have been present in earlier stages of the language.

Yukulta, to the north of Kalkatungu (but also not closely genetically related to it), shows perhaps the most interesting example in Australia of conditions under which an antipassive construction is used. Transitive verbs can again appear in two construction-types, identical in their case markings to regular transitives and antipassives in Dyirbal and to (i) and (ii) in Kalkatungu:

(iii) NP_A+ERG NP_O+ABS transitive tense/aspect allomorphs
(iv) NP_A+ABS NP_O+DAT intransitive tense/aspect allomorphs.

Case forms in Yukulta are a little different from the Australian norm – ergative is basically *-ya*, dative has underlying form *-inhdha*, and absolutive has a number of allomorphs, one of which is zero (onto a vowel-final stem of more than two syllables). A clitic complex, which is usually attached to the first constituent of the sentence, involves bound pronouns cross-referencing subject and object, and tense/aspect markers. In a regular transitive sentence, of type (iii), the clitic complex includes a transitive marker *-ga-* between the bound pronouns and transitive allomorphs of the tense/aspect inflections. In an intransitive sentence, or a construction of type (iv) involving a transitive root, *-ga-* is missing and intransitive tense/aspect allomorphs occur.

The use of construction (iii) or (iv) is fairly strictly conditioned; there are two factors involved – the aspectual specification of the sentence, and the identity of A and O NPs. Construction (iii) is used with firm statements of past or present fact ('the man is hitting the child') or future intention ('I expect to see you') while (iv) must be employed for irrealis statements ('I won't hit you', 'I'd like to see you'). Construction (iv) must also be employed – whatever the tense/polarity of the sentence – if (a) A is third person and O first or second person, or (b) A is second person and O non-singular first person. This factor clearly relates to the semantic hierarchy that we invoked in 9.7 to explain the occurrence of ergative and accusative inflections. If the O NP is further to the left of the hierarchy than A, then an antipassive construction must be employed.

(The only oddity, which cannot be explained, is the restriction to NON-SINGULAR first person in (b).)

There is no clear trace of any original antipassive derivational suffix in Yukulta. The fact that a transitive verb ending in *-adh* forms its reflexive by changing the final interdental to a palatal i.e. *-aj* (e.g. *baladh-* 'hit'→*balaj-* 'hit oneself') could conceivably relate to an original reflexive *-yi-* i.e. *-adh+yi->-aj*. (In the next section we show that there is a reflexive *-yi-* in Lardil, Yukulta's close genetic relative, and that this *-yi-* can be posited for proto-Yukulta–Lardil).

13.4.2 *Development from ergative towards accusative systems*

Although most Australian languages have nouns inflecting on an absolutive–ergative and free pronouns on a nominative–accusative pattern, there are a few languages in which both nouns and pronouns have the same inflectional paradigm – they can either both follow an ergative, or both follow an accusative system.

In 11.1.5 we described how Warlpiri first developed bound-form pronouns, which followed the free pronouns in having a nominative–accusative paradigm. Then the absolutive–ergative inflection on nouns was generalised to apply also to free-form pronouns, while bound pronouns retained the nominative–accusative pattern. In fact, virtually every language that has extended the nominal ergative system to apply also to free pronouns does retain bound pronominals with an accusative organisation. One of the very few languages in which nouns and free-form pronouns inflect identically, and in which there are no bound form pronouns, is Pitta-Pitta; but here the system of inflections is complex – S(ϕ), A(*-lu*) and O(*-nha*) are all marked differently on non-future sentences, while for future clauses deep A (which could be regarded as surface S) and S are marked by *-ŋu*.

In two geographically separate groups of languages case inflection is strictly nominative–accusative on both pronouns and nouns. It is possible to reconstruct how this came about; there are in fact a number of languages that appear to be part-way through a series of changes that would lead to this end result.

Consider Warrgamay, for instance. It is possible to reconstruct that an earlier stage of the language had two verbal conjugations, which correlated with – but did not coincide with – transitivity classes; and that there was also an antipassive construction marked by the verbal suffix *-la-*. In all this the Warrgamay system was like the present-day system in Dyirbal, its northerly neighbour. But then a number of changes occurred. Firstly, as reported in 12.2.6, the conjugational classes came to coincide exactly with transitivity; the few intransitive verb roots in the *l* class, which was predominantly transitive, were transferred to the intransitive *y* conjugation. There was still at this stage a productive antipassive derivation; each transitive verb could take *l* conjugation allomorphs and function in a transitive clause, with A and O NPs, or an intransitive stem could be derived by the addition of *-la-*, and this would then take *y* conjugation allomorphs and function in an intransitive sentence with the underlying A NP being in derived S function and underlying O taking dative or instrumental case. The suffixes added to verb roots would at this stage have been, for three sample inflections:

(v)

	INTRANSITIVE SENTENCES		TRANSITIVE SENTENCES
	to intransitive root	to transitive root	to transitive root
future	*-ma*	*-la+ma*	*-lma*
purposive	*-gu*	*-la+gu*	*-gu*
positive imperative	*-ga*	*-la+ga*	*-ya~ϕ*

Then a further change occurred; just one set of additions to the verb root in an intransitive sentence developed, through, effectively, merger of the first and second columns in (v). That is, the modern language allows:

(vi)

	INTRANSITIVE SENTENCES	TRANSITIVE SENTENCES
	to intransitive or transitive root	to transitive root
future	*-ma*	*-lma*
purposive	*-lagu*	*-gu*
positive imperative	*-ga*	*-ya~ϕ*

In present-day Warrgamay an intransitive root can only occur in an intransitive sentence, and must take inflectional allomorphs from the left-hand column; but although transitive roots most commonly appear in transitive sentences – with A and O NPs – and must then take inflections from the right-hand column, they can also occur in intransitive constructions – with just one core NP, in S function – and must then take inflectional forms from the left-hand column. The A NP of a transitive construction corresponds to the S NP of an intransitive sentence involving a transitive root; the transitive O NP is placed in either dative or instrumental case in the intransitive clause (depending on a number of syntactic factors).

The left-hand column in (vi) takes purposive from the middle column of (v) but all other forms come from the left-hand column in (v). The main function of purposive is to mark the verb in a complement clause (e.g. 'I went to spear the wallaby'); transitive roots occur more frequently than intransitives in this slot and so *-lagu* would have been more common than *-gu* in intransitive clauses. For the other inflections the straightforward intransitive forms (*-ma* and *-ga*) would have been more common than the derived intransitives *-la+ma* and *-la+ga*, and have replaced them. The new intransitive allomorph of purposive *-lagu* involves the old antipassive *-la-*, and the old intransitive suffix *-gu*; note that *-lagu* is not analysable within modern Warrgamay (*-la-* does not now occur outside this form).

Although all or very nearly all transitive verbs can occur in intransitive sentences, they do so fairly sparingly. This construction is used for reflexives; for when the speaker does not wish to specify the underlying O NP; and to meet certain syntactic constraints on subordination and coordination. We return to this in 13.6.

There are one or two other languages with similar syntactic phenomena to Warrgamay. In the Western Torres Straits language each transitive verb can occur in a regular transitive construction with ergative marking on A and absolutive on O NP; or it can occur in an intransitive construction with the underlying A NP taking on surface S function and with deep O NP in ergative inflection. As in Warrgamay, there are distinct allomorphs of verbal inflections for intransitive and for transitive clauses. There is, however, a semantic difference from Warrgamay: in the Western Torres Straits language an intransitive construction involving a transitive verb indicates, roughly, that the action was done to ALL of a set of objects (e.g. 'I cut down all of these trees').

It is not hard to see the way in which an entirely accusative morphology could develop. We have seen a number of different examples of transitive verbs appearing in intransitive constructions, with no overt antipassive marker on the verb; most or all of these probably developed from productive antipassives like that described for

Dyirbal (13.3.2). In Pitta-Pitta a construction of this type must be used in all future clauses; in Yukulta it indicates an irrealis statement, or an A NP lower on the person hierarchy than the O NP; in Kalkatungu it marks an uncompleted, continuing activity. In the Western Torres Straits language any verb can occur in an intransitive construction, for semantic reasons, and in Warrgamay the same is true but mainly for syntactic reasons. All that is needed is for the 'intransitive construction' gradually to become a more and more popular vehicle for transitive verbs, until it entirely replaces the original transitive construction with its ergative case marking. That is, a sentence like (22) would BECOME the NORMAL transitive construction, with the original type (21) falling into disuse. What we would now have would be the same marking (our original absolutive) for S and A NPs, while O NPs would be in the case that was originally identified as dative – as in (22) – or locative or instrumental–ergative, depending on the language concerned.

It appears that this is exactly what has happened in Yinyjibarnrdi and Ngarluma, spoken near Port Hedland in Western Australia. There is now a straightforward nominative–accusative system of inflections on nouns and pronouns; nominative has zero realisation, while the main allomorph of accusative is *-gu*, cognate with the dative case in most other languages (see 10.1–3). The fact that *-gu* inflection marks indirect as well as direct object in these languages lends support for our hypothesis that this accusative case system developed out of an original ergative system, similar to that found in most other Australian languages. Further support is provided by the existence of a passive construction that involves derivational affix *-ŋuli* to the verb, with O being then marked by absolutive (zero) case and A by *-ŋgu* ~ *-lu*, identical to the ergative suffix in other languages. The suffix *-ŋuli* also derives intransitive verbs from nouns and adjectives (e.g. *mudhu* + *ŋuli-* 'become cold'). It seems that *-ŋuli* has assumed a general intransitivising function, and forms passive-type intransitive constructions from something like participial clauses, which do preserve the original ergative inflectional system.

There is just one other language in which nouns and pronouns show an entirely nominative–accusative paradigm – Lardil, spoken on Mornington Island and a close genetic relative of Yukulta. Exactly the same genesis can be suggested as in the Yinyjibarnrdi–Ngarluma example. The situation here is more complex, and not all the developmental details are fully understood. But we can summarise some of the main factors which point towards Lardil having had an ergative ancestor.

Lardil has undergone a number of striking phonological changes, resulting in the general shortening of forms; it is likely that the more conservative Yukulta is fairly close to proto-Lardil–Yukulta. We have noted that the main allomorph of ergative in Yukulta is *-ya*. Now Lardil has a rule which deletes the final vowel of any form of more than two syllables, and then the preceding consonant too unless it is an apical – these rules would entirely eliminate a final ergative inflection *-ya* onto a root that was disyllabic or longer. Another important factor is the similarity between dative in Yukulta and accusative in Lardil – both can be related to an underlying *-inhdha*. The evidence thus points strongly to the fact that the underlying antipassive, (iv), in proto-Lardil–Yukulta has been generalised as the main transitive construction in modern Lardil; once ergative inflection had been lost there would have been nothing to distinguish A and O NPs within construction-type (iii), and this has naturally been dropped. There is one relic of the original ergative system – the O NP in an imperative bears zero (nominative) inflection, rather than the expected accusative. Imperatives are seldom found in antipassive form in languages like Dyirbal, and there would be no impediment here to the original transitive construction, of type (iii), being retained; the A NP must be a second person form, and any non-second person NP without inflection could only be understood as being in O function.

Lardil has a passive construction, marked by verbal suffix *-(y)i-*. Interestingly, this also marks reflexive; it is probably a further reflex of the putative reflexive derivational affix **-DHirri-y* (see 13.3.2, 13.4.1). In the reflexive construction, identical A and O NPs are realised as an S NP, in nominative case. The passive has underlying O NP in nominative case, with A being marked by genitive if it is a pronoun or if the verb is in future, non-future or admonitive tenses, and by accusative case otherwise. The suffix *-(y)i-* retains its central reflexive function, as do its cognates in Dyirbal, Yidiny and Guugu Yimidhirr, but it has in Lardil been extended also to cover passive derivations (compare with Yidiny, where *-Vji-n* is used in reflexive and also in ANTIpassive constructions).

13.5 Complex sentences

Most Australian languages have a fair number of syntactic processes whereby a number of simple clauses are linked together into coordinate and subordinate constructions. Only a minority of languages have a class of words that specifically mark coordination (like English *and*, *but*, *because*, and the like); coordination can be shown by intonation patterns, by the deletion of a repeated NP – often under rather strict syntactic conditions, to be described below – and sometimes by special verbal inflections.

We mentioned in 12.1 that very many Australian languages have a verbal purposive inflection *-gu*; this is probably related to the recurrent nominal inflection *-gu*, which marks purposive, dative and genitive functions (10.3.3). The purposive ending is often the only inflection which can occur on verbs in both main clauses and subordinate clauses. In main clauses it indicates need, obligation or desire e.g. 'I SHOULD BUILD a house (the storms will come soon)' (see 12.1).

The most usual semantic interpretation of a complex sentence in which the complement clause is marked by verbal *-gu* is that the event of the main clause was performed IN ORDER THAT the action performed by the subordinate clause might be possible, as in the Dyirbal sentence:

(23) *bayi yara buŋa+n bana+ŋga*
HE+ABS man+ABS descend+PAST water+LOC
bura+yirri+gu
see+REFL+PURP
'The man went downhill to look at himself in the water.'

Sometimes the event referred to by the purposive clause may be a NATURAL (but perhaps unplanned) CONSEQUENCE of the event described by the main clause, as in the Dyirbal sentence:

(24) *balan jugumbil miyanda+nyu baŋgul*
SHE+ABS woman+ABS laugh+PAST HE+ERG
yara+ŋgu bura+li
man+ERG see+PURP
'The woman laughed and was (as a result) seen by the man (i.e. he looked in the direction of the laugh and espied the woman in hiding).'

(Note that in Dyirbal the verbal purposive inflection is *-gu* onto verbs from the *y* conjugation but *-li* with stems of the *l* class).

A fair number of Australian languages have an 'apprehensional' subordinate construction; the main clause indicates steps that are being, or should be, taken to avoid some undesirable event, which is described by a subordinate clause whose verbs bear a special 'apprehensional' inflection. An example was given at (1) in 12.1. Unlike purposive, which has similar form in languages from every part of the continent, the apprehensional inflection varies widely in form – it is *-ji* in Yidiny, *-bila*~*-ba* in Dyirbal, and *-ma* in Warrgamay, for instance (see also 12.1).

Most languages also have one or more types of relative clause, marked by a verbal inflection; here again the forms of the inflection seem to be quite different in every language. There are clear indications that relative clause constructions, like apprehensional constructions, have developed rather recently and in rather different ways in different languages.

Perhaps the most common type of subordinate clause markings are those which are similar in form to the case inflections on local peripheral NPs; in Warlpiri, for instance, subordinate clauses are marked by the addition of allative *-kurra*, locative *-rla* etc. (see 10.2) to an infinitival verbal stem. A similar situation is found in the Western Torres Straits language. In Yidiny there are three types of subordinate clause that match up exactly with the three types of local peripheral NP and the three types of syntactic peripheral NP described in 10.1. The dative subordinate clause usually indicates something that is happening concurrently with the main clause; it is marked by verbal inflection *-nyu+nda* (compare nominal dative *-nda*) as in (cf. (11) in 10.1):

(25) *waguja+ŋgu gurŋga wawa+l maŋga+nyu+nda*
man+ERG kookaburra+ABS see+PRES laugh+DAT-SUBORD
'The man is watching the kookaburra laughing.'

A causal subordinate clause in Yidiny will refer to some activity that was completed before the action referred to by the main clause began: it is marked by verbal inflection *-nyu+m* (compare nominal causal-ablative *-mu*~*-m*) as in (cf. (18) in 10.1):

(26) *waguja+ŋgu bunya wawa+l gudaga+ŋgu*
man+ERG woman+ABS see+PRES dog+ERG
baja+l+nyu+m
bite+CAUS-SUBORD
'The man is looking at the woman who had been bitten by the dog.'

The third type of subordinate clause in Yidiny is purposive, and it is syntactically and semantically parallel to nominal allative and purposive NPs. (There is a lack of formal correspondence here, with the nominal purposive being *-gu* but verbal purposive *-na*. It is, however, possible to reconstruct a verbal purposive that did involve *-gu* in an earlier stage of the language; this was then replaced by the original future inflection *-na*, with present tense *-ŋ*~*-l*~*-r* extending also to cover simple future.)

Note that relative clauses in Yidiny must come after (or, occasionally, before) the main clause; they cannot be inserted within the main clause; similar remarks apply to Warlpiri (but not to relative clauses in Dyirbal, for instance). It seems probable that an inflection which was originally confined to nominals was generalised also to mark qualifying clauses – it is a natural step from 'I'm full from food' to 'I'm full from eating food', or from 'I'm going out for wallabies' to 'I'm going out (for) to spear wallabies'. There are syntactic reasons, in some languages, for regarding these clauses as being 'adjoined' to the main clause, rather than being embedded within it.

But not all relative clauses evolved by this route. In Dyirbal there are two kinds of relative clause, one describing action simultaneous with that of the main clause, with inflection *-ŋu* on the subordinate clause verb, and another referring to action that preceded that of the main clause, marked by subordinate inflection *-mi*. These verbal inflections are identical to the two varieties of genitive marking on nouns – the general genitive *-mi* indicates that someone used to possess an object, or that he still owns it but does not have it in his possession just now, while simple genitive *-ŋu* marks present possession (10.2). This semantic and formal correspondence between genitive and relative clause inflections suggests that in Dyirbal it was the genitive marking which was generalised to mark types of subordinate clause.

In summary, although most non-prefixing languages have a variety of types of subordinate clause, there are – with the notable exception of purposive – strikingly different morphological markings (and sometimes also different syntactic constraints – see 13.6), suggesting that they are construction-types which have developed independently, and probably quite recently, in the individual languages. There is less evidence of complex sentence types in the prefixing languages of the central north; it does seem, in fact, that languages – from all parts of the world – with extensive nominal cross-referencing in the verb tend to have relatively little in the way of formal marking of subordinate clause types.

13.6 Syntactic identification

Discourse will typically involve a number of clauses linked together – in coordinate or subordinate constructions – through their sharing a common NP. There is strong motivation to delete the occurrences of this common NP in clauses after the initial one, in order to avoid redundancy. But it is important that there be some means of identifying what syntactic function the deleted NP had in each clause, so that there should be no ambiguity of meaning. Australian languages use one of two syntactic devices to ensure that this identification of function of a deleted NP can be unequivocally made. We describe the alternatives in the following subsections.

13.6.1 *Constraints on coreferentiality*

In English, two clauses can be conjoined by *and* (subject to there being some relevant semantic connection between them). If the same NP occurs in each of two conjoined clauses, its occurrence in the second clause can only be deleted if it is in surface S or A function in each clause. Thus, hearing *John saw Mary and laughed*, we know that it is John, and not Mary, who laughed; if we want to conjoin together *John saw Mary* and *Tom hit John* and delete the second occurrence of the common NP, then the second clause must be passivised, putting the deep O NP, *John*, into surface S function, giving *John saw Mary and was hit by Tom.*

Many Australian languages have constraints on the syntactic function of repeated NPs in order that they can be deleted, very similar in general form to this constraint in English except that they sometimes link together S and O functions as the syntactic 'pivot', whereas English has an exclusively S/A pivot. The constraint is often stronger than that in English – in Dyirbal two clauses can be conjoined ONLY if they have a common NP, and if this NP is in S or O function in each clause; the occurrence of the common NP in the second clause is then usually (but not obligatorily) deleted (and the two conjoined clauses can make up a single intonation group). Thus if we have:

(27) *balan guda buŋa+n*
SHE+ABS dog+ABS descend+PAST
'The dog went downhill.'

(28) *balan guda baŋgul yara+ŋgu bura+n*
SHE+ABS dog+ABS HE+ERG man+ERG see+PAST
'The man saw the dog.'

these can be conjoined, since they share an NP, 'the dog', that is in S function in (27) and in O function in (28); deleting the second occurrence of the common NP gives:

(29) *balan guda buŋan baŋgul yaraŋgu buran*
'The dog went downhill and was seen by the man.'

Or, conjoining the clauses in the opposite order, we can have:

(30) *balan guda baŋgul yaraŋgu buran buŋan*
'The dog was seen by the man and went downhill.'

But in order to coordinate together·

(31) *bayi yara buŋan*
'The man went downhill.'

and (28), the transitive sentence must be antipassivised, by rule (12) from 13.3.2. The common NP is in S function in (31) but in A function in (28); the antipassive derivation will place it in surface S function:

(32) *bayi yara buralŋanyu bagun gudagu*
'The man saw the dog.'

Then (31) and (32) yield:

(33) *bayi yara buŋan buralŋanyu bagun gudagu*
'The man went downhill and saw the dog.'

The point of these examples is to show that, in terms of the condition of S/O coreferentiality between conjoined clauses, a speaker of Dyirbal will unequivocally know, on hearing (30), that it is the dog who went downhill not the man (just as a speaker of English knows that in *the man saw the dog and went downhill* it is the man, not the dog, who descended the hill).

There are usually similar constraints on subordinate constructions. We mentioned that, for Kalkatungu, if the A NP in a subordinate clause is coreferential with the S or O NP in the main clause then the subordinate clause must be antipassivised, with the common NP going into derived S function – see (18) in 13.4.1. In Yidiny the common NP must be in S or O function in both main and subordinate clauses; if it is in underlying A function in either clause this must be brought into derived S function through an antipassive derivation, marked by the verbal affix -*Vji-n*. Thus (26) in 13.5 was based on the two simple sentences:

(34) *waguja+ŋgu bunya wawa+l*
man+ERG woman+ABS see+PRES
'The man is looking at the woman.'

(35) *gudaga+ŋgu bunya baja+l*
dog+ERG woman+ABS bite+PRES
'The dog is biting the woman.'

The common NP is in O function in both clauses, satisfying the coreferentiality condition (note that in (25) the condition is also satisfied – here the common NP 'the kookaburra' is in O function in the main and S in the subordinate clause). But suppose that we had as main clause not (34) but:

(36) *waguja+ŋgu gudaaga wawa+l*
man+ERG dog+ABS see+PRES
'The man is looking at the dog.'

The common NP is now *gudaga* 'the dog', which is in O function in (36) but in A function in (35). Sentence (35) must be antipassivised, underlying A becoming derived S, and O being marked by dative inflection *-nda*; the verb takes antipassive derivational affix -*Vji-n* (present tense allomorph for the *-n* conjugation is *-ŋ-*; see 12.2), thus:

(37) *gudaaga baja+aji+ŋ bunyaa+nda*
dog+ABS bite+ANTIPASS+PRES woman+DAT
'The dog is biting the woman.'

We can now form the causal subordinate construction:

(38) *wagujaŋgu gudaaga wawal bajaajinyum bunyaanda*
'The man is looking at the dog which had bitten the woman.'

In Dyirbal, purposive constructions require the common NP to be in S or O function for each clause, as in Yidiny. However, in Dyirbal relative clauses, marked by verbal suffix *-ŋu* or *-mi*, the common NP must be in S or O function in the subordinate clause but can be in any function in the main clause; the subordinate clause then shows a case inflection – which follows the *-ŋu/mi* relative marker – agreeing with the case inflection of the common NP in the main clause.

We have illustrated the main function of the antipassive derivation for languages like Dyirbal and Yidiny – it is needed to ensure that a common NP is in S or O function, in order to satisfy the coreferentiality condition. (The derivation described in 13.3.1, whereby an instrumental NP is placed in surface O function, is also needed to satisfy the coreferentiality constraint. If we wish to coordinate (27) from 10.3.2, 'the woman is carrying the axe over to the man', with (8) from 13.3.1, then the latter must be recast as the construction shown in (9); the common NP is now in O function in each clause, 'the axe was carried by the woman over to the man so that he could use it to cut the tree'.) Some constraints are needed so that repeated occurrences of a common NP can be deleted and so that the functional status of these deleted NPs should be immediately retrievable. The condition that a common NP should be in S or O function in some (or all) clauses of a complex construction leads to the need for grammatical processes that will put an underlying A (or instrumental) NP into derived S or O function. The antipassive indicator +*ŋa-y* on the second verb in (33) indicates that the common NP which runs through this construction – stated as *bayi yara* in the main clause – is surface S but underlying A NP of the clause with verb *bura-l* 'see'. This role of the antipassive far outweighs in importance and frequency the others we mentioned in 13.3.2. In Dyirbal an antipassive construction is only very rarely found as initial sentence of a discourse (when the O NP is not to be specified, or the A NP involves a demonstrative); antipassive is almost totally restricted to non-initial clauses, which provide further comment on an absolutive S or O 'pivot' NP that has already been stated in an earlier clause.

We mentioned that in Warrgamay transitive verbs can occur in transitive or in intransitive constructions, taking the appropriate inflectional allomorphs (13.4.2). Warrgamay has similar coreferentiality constraints to Dyirbal, involving an S/O pivot, and transitive verbs are used in intransitive constructions for the same reason as the antipassive is used in Dyirbal, to put a common NP that is in deep A function into a derived S slot. (It is interesting to note that the Warrgamay development we described in 13.4.2 was thus motivated by an S/O syntactic pivot, an instance of 'ergative' syntax. But the logical end-point of this line of development would, paradoxically, be for Warrgamay to change from a split-ergative to pure accusative morphology, following the lead of Yinyjibarnrdi/Ngarluma and Lardil!)

Dyirbal is like Warrgamay in having a split morphology – pronouns follow a nominative–accusative system while nouns inflect in an absolutive–ergative paradigm (see 9.7). Yet – and this is a quite vital point – all coordination and subordination works in terms of an S/O pivot, whether the common NP is nominal or pronominal. Non-singular pronouns have identical form for S and A functions, and different forms for O function, but from the point of view of coreferentiality in complex sentences S and O count as equivalent, and A as different. Thus, although morphology identifies S and O in some areas but S and A in others, the syntax consistently identifies just S and O (this is sometimes referred to as an 'ergative syntax').

We have purposely exemplified the S/O syntactic pivot in Australian languages, since this is a relatively rare phenomenon among languages of the world. However, it is only evident in SOME Australian languages. Many languages have a split ergative/accusative morphology, like Dyirbal and Warrgamay, but work exclusively in terms of an S/A pivot, like English. Both Walmatjari and Warlpiri are of this type. Other languages mix the two kinds of pivot. Thus although all subordinate constructions in Yidiny use S/O, irrespective of whether the common NP is nominal or pronominal, coordination exactly mirrors morphology – it requires S = O identification if the common NP is nominal, but S = A if it is a pronoun.

13.6.2 *Switch-reference marking*

There is another way in which the function of a deleted NP can be unambiguously recovered, and that is for the language to have a general system for marking whether or not the two clauses in a complex sentence have a coreferential NP which is in the same function in each. This is referred to as 'switch-reference' marking. It is an areal syntactic feature, found in languages in a large geographical block, stretching from the west coast across to South Australia, the southern part of the Northern Territory, and even western Queensland (8.4).

We can illustrate with the Diyari system, as described by Peter Austin. Here there are two possible inflections on the verb of a relative clause, or of a purposive clause – one indicates that this clause has the same subject (S or A) NP as the main clause, the other that they do not have coreferential subjects (there could be a coreferential NP which is in a non-subject function in one or both clauses, or there could be no NP common to the two clauses). Thus the verb of a purposive clause bears the inflection *-lha* if it has the same subject as the main clause (this can be in S or A function in either clause), and *-rnanhthu* otherwise. The occurrence of the common NP from the second clause can be freely deleted.

We can illustrate by showing how Diyari would deal with 'I promised him to return' and 'I persuaded him to return', sentences that are commonly used to demonstrate the disparity between deep and surface structures in English. The first of these shows coreferential subjects (= 'I promised him that I would return') so that the verb 'return' would be marked by *-lha*, while the second shows different subjects (= 'I persuaded him that he should return') and here 'return' requires *-rnanhthu*. The interesting point is that a language with switch-reference marking amongst its grammatical apparatus would not necessarily require two distinct verbs 'promise' and 'persuade'; a single lexical item could suffice with the switch-reference marking ensuring that there could be no possibility of confusion. This is what is found in Diyari, with the compound verb *tharlpa+taka-* (literally 'ear-pierce') translating both 'promise' and 'persuade'. Thus (see 12.3 for the significance of 'recent past' auxiliary *warra*):

(39) *ŋathu nhinha tharlpa+rdaka+rna waɾa+yi,*
I+A he+O tell+PARTICIPLE AUX+PRES
thika+lha
return+SAME-SUBJ-PURP
'I promised him to return.'

(40) *ŋathu nhinha tharlpa+rdaka+rna waɾa+yi,*
thika+rnanhthu
return+DIFF-SUBJ-PURP
'I persuaded him to return.'

Switch-reference marking is, like passive and antipassive, motivated by the need to recover the functional status of an NP deleted under coreferentiality. Languages with switch-reference do not of course require any passive or antipassive derivational processes. Switch-reference is, in fact, more powerful than passive or antipassive, since it can also carry distinctions that are shown by lexical means in other languages (like that between *promise* and *persuade*).

All the switch-referencing systems in Australia, like those reported from other parts of the world, work in terms of an S/A pivot. There is no a priori reason why there should not be a language with switch-referencing on an S/O basis. Indeed, it is rather likely that a systematic search of the languages of the world would reveal examples; but no system of this type has yet been reported.

14

Summary

In this chapter we recapitulate some of the main typological features of Australian languages and our suggestions concerning their genetic development.

It is fairly clear that almost all the 200 or so modern Australian languages are genetically related (there are just a few languages in the central north – particularly Tiwi and Djingili – which lack the evidence of verb correspondences that is critical genetic proof in other instances). They are descended from a single ancestor, proto-Australian (pA), that was probably spoken somewhere within the Australian land-mass.

Aboriginal Australians have been in the continent for more than 40,000 years; there is no way of telling whether pA was spoken by the first settlers or whether it dates from a more recent time. There is, however, strong evidence that some tribes may have been in their present situation for many thousands of years. Many linguistic traits – like cultural mores and technological skills – have had time to diffuse over considerable areas of the continent, in a steady fashion. These and other points suggest that pA had considerable antiquity – that it was probably spoken long before proto-Indo-European, for instance. There is no evidence of a genetic connection between Australian and any other language family; indeed the time depth is probably such that any sister language which pA left behind in South-East Asia, say, would be likely to have changed out of all recognition, so that evidence of a genetic connection would not be retrievable.

The modern languages can be arranged in low-level genetic subgroups, each involving from one to eight or nine members. No intensive work has yet been attempted on higher-level subgroups, in terms of shared innovations during the development from pA; the difficulty of distinguishing between similarities which are due to areal and those due to genetic factors may mean that a full subgrouping will not be possible. Certainly there must have been considerable movements of population, which would assist the borrowing of linguistic features. Thirty thousand years ago the continent could support rather more people than it did at the time of the European invasion; then water became less plentiful and 20,000 years ago it would have supported a much smaller number of people than it did in 1788. The central desert areas could well have been populated at an early stage, then abandoned as survival became possible only near the coast or a major river, and finally settled again as the geographical pattern reversed. Population movements must also have followed the contraction of the coast line, submersion of the Gulf of Carpentaria, and cutting off of land links with New Guinea and Tasmania, about ten millennia ago.

Not enough is yet known to suggest in what part of the continent pA was spoken, or the routes by which people and languages spread out over the continent; but this may have been a quite complex movement. Little work has been done so far on lexical reconstruction of pA and nothing can be said about the life and habits of its speakers, save that they must have been familiar with fire.

Tasmania was cut off – by the rise of the sea level 12,000 years ago – from exposure to cultural and technical innovations which spread across the mainland. Its isolation kept it apart from areal linguistic developments on the mainland, and must have also been responsible for fairly independent linguistic development within Tasmania. The materials on Tasmanian languages are so poor that it is not possible to establish a genetic relationship with the Australian family; indeed, it is doubtful if full information would allow a connection to be proved, after such a period of separation and isolation. But phonologically Tasmanian shows the main features of Australian languages and is in fact most reminiscent of the pattern we posit for an early stage of Australian (before laminal and apical splits took place, and so on). All we can conclude is that there is NO evidence that Tasmanian was NOT a language of the Australian family.

Each tribe identifies itself with a particular territory, and with a specific 'language'. The speech of several neighbouring tribes would often be mutually intelligible – so that they would be classified linguistically as dialects of a single language; nevertheless, dialectal differences between tribes were taken as vital indices of political affiliation. Each local group within a tribe would also have its own dialect; sometimes the major dialect boundaries would not coincide with tribal boundaries within a multi-tribal language community. Limited exogamy and trade relations led to the diffusion of linguistic traits – development of bound-form pronouns, loss of contrastive vowel length, establishment of a phonological contrast between interdental and palatal consonants, and the like. Most developments apply to all the languages in a certain geographical area, irrespective of their close or distant genetic relationship; indeed, important isoglosses frequently run between dialects of a single language.

The most important linguistic area is in the central north where the so-called non-Pama-Nyungan languages have developed complex verbal morphologies, often involving prefixes that refer to number and person of subject, object etc., as well as aspectual and tense indications, and so on; phonological changes have in some cases combined with these morphological developments to produce languages tending towards the 'inflectional' type, where morpheme boundaries are sometimes difficult to isolate. Languages outside this area maintain an entirely suffixing, agglutinative structure. There is no evidence that these areal traits correlate with genetic groupings.

Proto-Australian had syllables of the form $C_1V(C_2)$. Comparative evidence suggests a quite small consonant system – four stops, *b*, *d*, *j* and *g*, a corresponding set of nasals, *m*, *n*, *ny* and *ŋ*, semi-vowels *w* and *y*, two rhotics – a trill *rr* and semi-retroflex continuant *r* – the apico-alveolar lateral *l* and probably also a laminal lateral *ly*. The consonants *l*, *ly*, *rr* did not occur at C_1 and there can have been few if any examples of *n* in that position; only *n*, *l*, *rr*, *y*, *ny* and probably *ly* occurred at C_2. This suggests, rather speculatively, that there could have been a single rhotic phoneme, with allophone *r* occurring initially and *rr* finally, a single phoneme combining initial *d* and final *l*, and another phoneme with allophones *j*, initially, and *ly* finally: a total of only eleven consonants. If this were the case at an early stage of pA, a fourteen-term system would have become established by late pA times.

There was probably a system of just three vowels in pA. Some modern languages in the central north do show a five-vowel system; it is likely – although we cannot yet be absolutely certain – that this was a later development. There is evidence for a length contrast in just the initial syllable of a word, the syllable that bore stress in pA (as in most modern languages). Some modern languages retain the pA length contrast in an initial syllable; others have simply lost it, with – in a few of these languages – distinctive length being reintroduced at a later date through a variety of types of change.

Proto-Australian can be shown to have had a fair number of monosyllabic words, covering all parts of speech. One of the most important developments since pA has been the restriction introduced into many modern languages that each word should have at least two syllables, and often that each root should also be at least disyllabic; in languages which do show a handful of monosyllabic forms it is often the case that these must involve a long vowel, or a syllable-closing consonant, or both. Modern languages operate with a basic disyllabic pattern $C_1V_1(C_2)C_3V(C_4)$ with different systems operating at each of the four consonantal positions; sometimes one or two phonemes (often, *d*) can only occur at one of these positions, C_3. This phonotactic reanalysis has been partly responsible for some phonemic splits.

Almost all languages in the western two-thirds of the continent have developed a contrast between two series of apical stops and nasals – retroflex versus alveolar. It is likely that this was originally a phonetic distinction conditioned by the presence or absence of a preceding *u*, which has now attained phonemic status; the contrast is in most languages neutralised word-initially. Along the western and south-western coastal fringe and in a large eastern block the original laminal stop and nasal have split into contrastive palatal and interdental series; this was originally a phonetic distinction conditioned by the presence or absence of a following *i*. Many languages still show partial automatic conditioning of laminals by a following *i*, while in others a preceding *i* is now the relevant factor; the laminal contrast is normally neutralised in word-final position. A handful of languages on or near the Barkly Tableland have achieved a phonological split of the dorsal series, along similar lines. Throughout these developments the Australian characteristic of there being a nasal corresponding to each stop has been maintained.

All Australian languages have the two semi-vowels *w* and *y*. There are usually two rhotics, although a few languages have just one and a number show three. Most languages in the west now have a lateral in each non-peripheral series. Where there is a glottal stop it is a recent development – from *g* or *d* or *r* in different languages.

A number of striking, recent phonological changes have taken place, independently, in several distant and quite restricted areas. It seems that stress was first shifted to the second syllable of a word, and the initial syllable was then gradually elided – first the initial consonant dropping and then the vowel. This has given rise to monosyllabic words, often with an initial consonant cluster. It has also led to increases in the consonant and vowel inventories: phonetic alternations that were conditioned by some part of the initial syllable (quality of the initial consonant, length of the vowel etc.) took on the status of phonological contrasts when the conditioning environment was lost. This has led to series of fricatives, prestopped nasals and laterals, and to systems of six, or even a dozen or more, vowels.

Only a fairly restricted morphology can be reconstructed for pA. It seems likely that there were just four nominal cases. The plain stem (absolutive case) would have been used for S (intransitive subject) and O (transitive object) functions, with ergative *-lu* ~ *-du* marking transitive subject (A). There was a general locative *-la* ~ *-da*, which may have been the basis for all local case specifications; and *-gu* which covered purposive, dative and then genitive functions. Various increments could be added to these primary case inflections.

Most modern languages have a rather larger system of nominal inflections; some increments have, through reanalysis, been recognised as separate cases, and other cases have developed in specific languages from original particles and the like. Modern languages have also developed a fair range of derivational suffixes – dual, comitative and privative, and others, which differ in form from language to language.

The original pronoun system may have had four 'minimal' forms – 'I', 'you', 'you and I', and 'he/she/it' – and corresponding augmented forms – 'I and other(s)', 'you and other(s)', 'you and I and other(s)' and 'they'. Some modern languages, especially in the north, have retained a system of this basic type; others have recast it into a singular/dual/plural pattern – sometimes with and sometimes without an inclusive/exclusive distinction in the first person dual and plural.

For at least 'I' and 'you' the monosyllabic root was used for S function, ergative *-lu* ~ *-du* was added for A and accusative *-nya* ~ *-nha* for O function. The latter inflection probably also occurred on proper names in pA; in a few modern languages this accusative affix is found on human nouns or, very rarely, on nouns of all types. When phonotactic change demanded the replacement of monosyllabic words, the A pronoun forms were in many languages generalised to cover S function, leading to a nominative-(SA)–accusative(O) pronominal system, which contrasted with the absolutive (SO)–ergative(A) inflection of nouns and adjectives.

The verbal system of pA was fairly straightforward – syllabic inflections were simply added onto a monosyllabic or polysyllabic root. It is here that the developments have been most far-reaching. Phonological assimilations, blendings, elisions, and other changes at root–affix boundary led to the evolution of six or seven distinct conjugations, depending on whether the final segment of the root had in pA ended in a vowel, or in *y*, *ŋ*, *m*, *n*, *l* or *rr*. Most of these conjugational classes are preserved in languages of the west, and in isolated languages along the eastern coast. In other languages several classes have been combined into one, and there has been a tendency towards just two open classes, one predominantly transitive and the other largely intransitive (although conjugations very seldom coincide exactly with transitivity). Original monosyllabic verbs have generally been reanalysed in terms of a disyllabic root, which has been assigned to an open conjugation. In just a few languages analogical levelling has altogether eliminated conjugational distinctions, with all verbs taking the same inflectional forms. Most languages have developed a range of derivational suffixes, generally on a fairly individual basis.

Most languages in the northern half of the Northern Territory, and an adjacent region of Western Australia, have shared in an areal tendency towards polysynthetic verbal structure. Many verbs are compounds, with the first part a non-inflecting nominal-type element and the remainder one of a set of from six to twenty or thirty 'auxiliaries', most of which relate to pA monosyllabic roots. It is the auxiliary that can take a variety of prefixes and suffixes, which cross-reference core NPs, mark negation, tense, aspect, and so on; a few languages can even incorporate an object noun into the verbal word, flanked by different types of prefix. Since the syntactic functions of core NPs are shown within the verb these languages have little need for case inflections and have often dropped ergative and accusative from the pA system, developing in a different direction from languages outside this typological region.

The polysynthetic tongues have developed bound pronominal prefixes, from original free-form pronouns; the free pronouns have then been reformed on a system which again varies from language to language. This tendency towards bound-form pronouns has spread into languages to the south, where there are generally pronominal enclitics, which can be loosely attached to the end of a verb, or to the first word in a sentence. Bound pronominal suffixes or enclitics have also developed, independently, in the south-east, and in the central part of the Cape York Peninsula.

While languages in the central north have developed complex verb morphology, those in the remainder of the continent have evolved a number of ways of marking types of subordination and coordination; this has also been on a fairly language-particular basis. In some instances case inflections on local NPs have been generalised to mark types of subordinate clauses; in other languages genitive marking may have been extended to cover relative clauses. Languages in a western and central area have developed switch-reference marking – there are two inflections that can go onto the verb of a subordinate clause, one showing that it has the same subject as the main clause and the other indicating that they have different subjects.

Many languages have fairly strong syntactic constraints on the formation of complex sentences and on the deletion of a repeated noun phrase; passive and antipassive derivations are needed to satisfy these conditions. It is clear that pA had a basically ergative morphology – accusative systems have developed in a few isolated areas by regular change from an ergative origin. Syntactically, the modern languages divide between those with an S/O pivot, those with an S/A pivot, and those that make use of both. There is no evidence on which to base any statements about the syntactic orientation of pA.

Word order is quite free in most Australian languages; an underlying order can often be perceived but there may be almost unlimited variation from this. There are usually a fair number of specific interrogative/indefinite words – 'who/someone', 'what/something', 'where/somewhere', 'when/sometime', 'how many/some number', and often also interrogative verbs 'do what/do how'. Polar questions can sometimes be shown by a particle or by a clitic added to the first word of the sentence, but are more frequently marked only by a distinctive intonation pattern.

In keeping with their complex systems of social organisation, and well-articulated roles of responsibility for ceremony and social interchange, Australian tribes often have special speech styles for use in socially appropriate circumstances. There are some styles that are restricted to initiated men and used only on ceremonial occasions; the Lardil Damin style shows special forms that use types of click and other consonants not found in the everyday style. Almost every tribe has a special speech style which must be used in the presence of kin who stand in an 'avoidance relation' – typically, parent-in-law of the opposite sex. These avoidance styles generally have special forms for a few score or so of the most common lexical items; the Jalŋuy style of Dyirbal goes to the extreme of having no lexeme (except for a few kin terms) common to the everyday and avoidance styles, although fully grammatical words and affixes are identical between the two speech styles.

Australian grammars can reflect the habitat of their speakers – some tribes living in the well-watered hilly country between the east coast and the dividing range have determiners specifying whether an object is uphill, upriver, downhill, downriver or across the river, and how far up or down. The system of social classification can also extend into the grammar – languages in the centre have a rich set of pronouns depending on the relationship between speaker and hearer, their moiety membership, relative generation level, and so on.

There are special narrative styles, marked by lexical, grammatical and intonational devices which would not occur in everyday conversation. And there are invariably a number of song styles – some have cycles each containing several hundred songs. Song language may involve archaic phonology, morphology and lexemes; regular grammatical rules may be relaxed in song language, in specifiable ways. There are generally formal devices available for fitting words into the metre.

The Australian language scene was considerably disrupted by the white invasion, which began in 1788. Perhaps a quarter of the languages are now forgotten, except for a handful of words that serve as group identificatory signals in the English of urban Aborigines and part-Aborigines. About a further 100 of the original tally of around 200 languages seem doomed to extinction – they are remembered by just one or two very old people, or are spoken by only a few dozen people and are unlikely to survive more than one or two further generations. But there must be something of the order of fifty languages which are still used in daily discourse by anywhere from a few score to a few thousand people; there is no reason why these should not – as their speakers wish – continue indefinitely, if political interference can be avoided.

The attitude of white Australians could scarcely have been less conducive to the continuation of Australian languages and cultures. There are many examples on the mainland that can be compared to the genocide which wiped out all full-blood Tasmanians within three generations of contact; and those people who were not killed or sent to out-of-the-way settlements had their customs reviled and their languages laughed at as primitive, childish things. The attitude of

Federal politicians has changed a good deal within the last ten years, although there is little evidence that popular opinion has shifted to the same extent. But it has been quite wrongly imagined that sufficient money will salve past ills. What is needed is for Aboriginal Australians to be given back some of their own lands, to be allowed to live on them with a fairly self-sufficient economy and with their own political organisation, receiving expert assistance as they request it. Money is a minor ingredient in this recipe (except when needed for 'buying back' tribal lands that were never purchased from their traditional owners in the first place); a guarantee of political non-interference with tribal land and life, and respect for tribal customs, laws and values, are the prime factors.

What are also needed to help ease the racial situation in Australia today are a number of educational programmes. Firstly there should be an intensive campaign – through teachers' colleges, primary and secondary schools, television and radio, and talks to urban and rural adult groups – to explain to the white population something of the subtleties and intricacies of Aboriginal Australian life, society and languages. It must be pointed out that the fact that they were nomadic hunter-gatherers does not mean that their lives were less full, less satisfying or less aesthetically sensitive than those of agriculturalists or factory workers. And it should be stressed that the fact that they had no written language does not imply that their grammatical and lexical resources were one whit less developed than those of European tongues.

Secondly, there is need for very careful attention to the educational needs of Aboriginal Australians, as they themselves see them. It is possible for them to become fully bicultural, bilingual citizens – retaining their traditional cultural heritage and becoming fully aware of the European one – if the right sort of education is provided. At first they were largely denied schooling; then they were permitted – or forced – to go to schools which had an entirely European syllabus and which ignored or belittled everything in their own culture, including their languages. In recent years bilingual education has been introduced in the Northern Territory and into some States. The fact that no (or not enough) linguistic analysis had been done on some of the relevant languages was a difficulty, but steps are being taken at least partly to remedy this. The important thing now is to extend bilingual education to all States, and to ensure that it is implemented in a careful and controlled manner, so that it does not come into conflict with the traditional political organisation; in particular, the rich heritage of oral literature must be recorded, preferably by its most expert practitioners, before literacy dissolves the oral tradition.

It is impossible to overemphasise the role of traditional oral literature – the repository of history, legend and law – in the continuation of Australian languages. The cultural identity of any group is closely tied to its distinctive linguistic habits; a language will only continue to be spoken so long as it fulfils a significant social role. Aboriginal Australians rightly see the need to adapt to aspects of European life-style, if they are to survive as one ethnic group in a multi-cultural Australian society. But they will surely – within a century or two – merge indistinguishably into society-at-large, and lose their own cultural identity, if their traditional (and Kriol) languages are allowed to fall into disuse.

NOTES AND REFERENCES

[References dealing with specific languages are given in the 'Languages and Sources' section. Other references are given below, arranged by section number.]

Chapter 1

1.2 Quotes from Kenyon 1930:3; Barrett and Kenyon n.d.:40; Grey 1841:II, 367; Jack 1921:II, 736.

1.3 1770 Guugu Yimidhirr vocabularies in Parkinson 1773:147–53; Cook 1955:398–9 (identical to mss. Cook 1770:298–299A); Banks 1962:II, 136–7 (a longer list is in Banks' mss., see Mander-Jones 1972:361–2). Later vocabularies are King 1827:I, 368–9; Cunningham mss.; Roth 1898, 1901 (and see de Vis 1895); Haviland 1974.

Phillip's letter to Banks, dated 3 December 1791, is in Banks' Papers XVIII – 'Botanical and Horticultural 1789–1798' – 41–3 (in the Mitchell Library, Sydney). Other early Sydney vocabularies are Collins 1798:608–16; Tench 1961 passim; and Hunter 1793:407–14, 523.

There were a number of sound missionary grammars from the 1840s e.g. Teichelmann and Schürmann 1840; Schürmann 1844. The best was certainly Meyer 1843. Meyer's work is little known; parts of it were plagiarised by Taplin 1880 in his account of another dialect of the same language (the most interesting grammatical sections were ignored by Taplin). Quotes from Grey 1841:II, 208, 215, 216; Markus 1974:57. In the furthest districts, where exploration and settlement were still progressing after 1875 or 1880, massacre of Aboriginal Australians did continue e.g. Markus 1974:12–34.

Curr's annotated copy of *The Australian race* is in the ANU library, Canberra. Quotes from Lumholtz 1889: viii, 309, 308. Elkin 1937 makes cogent criticisms of Lumholtz, anticipating the results that I obtained by fieldwork in 1972–7; despite this, we still encounter articles like Birtles 1976 which uncritically repeat Lumholtz's material without giving thought to the possibility of checking it out with the remaining members of the tribe. The R. H. Mathews notebooks are currently in the possession of A. P. Elkin. Other worthwhile linguistic materials from the closing decades of the nineteenth century include Ridley 1875. The *Australasian Anthropological Journal* began publication in 1896; it changed its name to *Science of Man* in 1898.

Other linguistic work between 1920 and 1955 was Strehlow 1944 on Aranda; McConnel 1945 on Wik-Munkan; Trudinger 1943 on Pitjantjatjara; Love 1931–2, 1938 on Worora; and Daisy Bates, unpublished material on many Western Australian languages.

Quote from J. Kenyon 1930:3. The 1975 reprint of *The Aboriginal word book* bears a new subtitle 'Over 1000 house names to choose from'; despite this claim, the book contains only about 550 Australian and 130 Tasmanian words.

1.4 Classifications in Schmidt 1919; Capell 1956. Hale's original ideas were further worked on by Hale, O'Grady and Wurm and first published in O'Grady, Voegelin and Voegelin 1966; and in O'Grady, Wurm and Hale 1966.

Chapter 2

2.1 Quotes from Meggitt 1964:169, 171, 178 (see also Meggitt 1972); Tonkinson 1978:43. For details of Australian kinship systems, and moieties/sections/subsections, see Elkin 1954. Information on Eastern Arnhem Land from Warner 1937 (especially pp 39–41) and F. Morphy 1977.

Classic accounts of modes of address and naming are Stanner 1937; Hart 1930; see also Roth 1897:56ff; Thomson 1972. Nicknames given are from Dyirbal, Boulia district (Roth 1897:65), and the Daly River Area (Stanner 1937:308). Both sacred names quoted are Yidinyji (Dixon 1977a:18,28). Amongst the Tiwi (Hart 1930) and the Dyirbalŋan two living people cannot share the same name; this is not the case in the Daly River area (Stanner 1937 gives an excellent account of the social implications of having the same name), in Eastern Arnhem Land (information from Frances Morphy), or in Kurtjar from the Normanton area, where in fact expressions such as *welaβ elɣ* 'they-two name' exist to refer to people sharing the same name (information from Paul Black).

Quotes from Stanner 1937:301; Hart 1930:282 (two passages combined), 290. Paul Black reports that in Kurtjar words which are tabooed because of their similarity to that of a deceased person are replaced by lexical items existing specifically for this purpose; a place name like that of the deceased is replaced by *rookir.čontik*, whereas a common noun or personal name is replaced by *rookir.βarr*. There is evidence that in the Kurtjar area death taboo was a less weighty factor in vocabulary change than in most other areas of Australia. Examples of tabooing from Frances Morphy (personal communication) and Douglas 1964:3.

2.2 Pitta-Pitta and St Lawrence section and moiety information from Roth 1897:56ff, 1910:100; Blake p.c. This similarity of section/moiety names over wide areas may in fact imply that this type of classificatory system, and the names that go with it, spread relatively recently. R. M. Berndt 1959 discusses the difficulty of recognising 'tribes' in the Western Desert. Following Sharp 1958, Sutton 1978 describes sociolinguistic phenomena in the Aurukun region, where dialect affiliation carries virtually no political significance except as an emblem of clan identity; in this area, affiliates to a single dialect are to be found in a scatter of several politically and residentially distinct groups, each of which is linguistically heterogeneous (all people are multilingual or bilingual).

2.3 The misleading statement that Australia is characterised by vast dialect chains (whereas these are, in fact, rather exceptional) seems to have originated in Voegelin, Voegelin, Wurm, O'Grady and Matsuda 1963; it has been repeated many times since. Parker's report is quoted in Morrison 1966:61.

2.4 The language name Ungarinyin is one of the few examples known of a language name being derived from a tribal name; it means, literally, 'a Ngarinyin thing of the *wu-* gender class, namely the Ngarinyin language'. Southern Victorian names from Dawson 1881 : 1–2; he mentioned that alternative names for these languages were the forms for 'you' e.g. Gnuutok, Gnuudook, Winna, Gnæ, Gnii etc.

2.5 Reference is to Birdsell 1957. Information on geographical changes over the last 30,000 years from Bowler 1976. Evidence for the southerly origin of Dyirbal is in Dixon 1972:330–52. Stories of the sea-level in ancient times are summarised in Campbell 1967; see also Dixon 1972:29, 1977a:14–15. Yaralde story about migration down the Darling and Murray Rivers in Taplin 1879b:3,61; Radcliffe-Brown 1918:226.

Chapter 3

3.1 Quotes from Meggitt 1972:71, 1966:198. See also Roth 1897:120–5. Discussion of narrative styles in Capell 1960 and of speech genres in C. H. Berndt 1978.

3.2 Quotation from T. Jones 1957:29 (=Elkin and Jones 1957:369). Note that songs current among different Yolŋu clans will be regarded as 'the same' if they have most (not necessarily all) of their phrases identical. Songs concerning invaders and their ways can in time be incorporated into ritual cycles, as in the Yolŋu area where not only Macassans (8.4) but also bulldozers are referred to in ceremonial. Details of diffusion of the Molonga ceremony from Roth 1897:117–18; Bates 1930; Mulvaney 1976. Paul Black reports a song from the Normanton area about a Chinaman, in which the beginning line or two is either in Chinese or in Chinese-sounding nonsense syllables. For further examples of archaic words in songs see Strehlow 1971:172, 193ff, 207. Examples of phonetic adaptation in songs in Strehlow 1971:64ff, and of the grammar of songs in Strehlow 1971:213ff. Austin forthcoming reports that in Diyari there is no tense or mood inflection on verbs in songs; this is obligatory for verbs in the spoken language.

For further discussion of songs and music see Strehlow 1971; Elkin and Jones 1957; Moyle 1979; Donaldson forthcoming; and Roth 1897, 1902:20–4. Clunies Ross 1978 provides the first extended critical analysis of a piece of Australian song poetry.

3.3 Wik-Meʔnh and Luritja from K. L. Hale, personal communication (see mss. 952, 859 in the Australian Institute of Aboriginal Studies library). Detailed information concerning the Jalŋuy style of Dyirbal is in Dixon 1971, 1972, forthcoming-f; note that the everyday style is called Guwal in southern dialects but Ngirrma in northern dialects – we here oversimplify and just use the term Guwal. Table of Guwal–Jalŋuy correspondences is from the northern Mamu dialect; in (7) George Watson speaks in Mamu Jalŋuy and Chloe Grant in Jirrbal Jalŋuy. Guugu Yimidhirr avoidance style is described in Haviland 1979b, forthcoming. Information on Warlpiri Yikirrinji style from Hale p.c.

Information is also available on avoidance styles in Atampaya, Gugada, Gunwinygu, Linngithigh, Oykangand, Pintupi, Umpila, Wik-Munkan and Yidiny (see 'Languages and sources'). See also Dawson 1881:29; Mathews 1904b:305–6;

and Curr 1886:III, 461 on avoidance styles in the south-east. Capell 1962b and Sommer 1976d provide general surveys on this topic. (Cf. also von Brandenstein 1967.)

3.4 A further 'secret language' is mentioned in O'Grady 1956.

Chapter 4

4.1 Quotes from Collins 1798:I, 544; Threlkeld 1834:xi–xii. Material from the *Sydney Gazette* of 2 January 1828 quoted in Ramson 1966:110–11; the translation into standard English has been slightly adapted from that originally given in the newspaper (but there has been no change in sense). Quotes from Gribble 1930:99; Strehlow 1947:xviii (reprinted in Hymes 1964:80). Account of blanket distribution at Atherton from Mitchell Library (Sydney) Newspaper Cuttings, LI, 35. A very early pidgin, for talking to Macassans, is mentioned in notes to 8.4.

Sentence (3) is from Douglas 1976:16–17. Sentence (4) was recorded in 1973 from Dick Moses, whose first language was Yidiny; note that Moses spoke a dialect of English, and NOT a Creole – *him* is here a pronoun and NOT a suffix to the verb (*chuck him* and not *chuckim*). The names *Hiding see* and *Hiding go see* were heard at Yarrabah Settlement, North Queensland, in 1972. Little has been written on Aboriginal English – see Flint 1968; Dutton 1969; Jernudd 1971; Sutton 1976c; Sharpe 1977; Elwell 1979; Kaldor and Malcolm 1979. Quote from Douglas 1976:15; Douglas also discusses Yeraka, a type of Pig Latin based on English that is used among women and girls in this region. Liberman 1978 and Nash forthcoming discuss language problems for Aborigines in courtrooms.

4.2 For many years the number of full-blood Aboriginal Australians fell while the half-caste population increased. There were probably about 300,000 people in Australia before the invasion of 1788. Estimates suggest that in 1921 there were some 50,000 full-bloods and 10,000 half-castes but by 1961 the figures were around 40,000 in each category. It is the number of full-bloods that is believed to have ceased falling about 1950 and to be now steadily rising (F. L. Jones 1970:4–5). Information on demography of the Tasmanians is summarised in R. Jones 1971. Quote from Douglas 1976:5.

4.3 Quotes from Kittredge, 'Introduction' to *Child's Ballads* (quoted in Coomaraswamy 1949:26); Harrisson 1937:344; the quote from Plato (put into the mouth of Socrates) is from Phaedrus 275; Archer 1943:68; Coomaraswamy 1949:25; Schweitzer 1955:171; Watts and Gallacher 1964:79–80; the *Sydney Morning Herald*, 15 December 1972; Watts, McGrath and Tandy 1974:7. (J. K. Harris 1968 is an earlier enlightened plea for bilingual education in the Northern Territory). For discussion of the relative educational success of tribal and semi-acculturated children see Seagrim and Lendon 1976. Quotes from S. G. Harris 1975:24; O'Grady and Hale 1974:20–1; Elwell 1977:98–9, 124. Deslandes 1979 provides an excellent survey of educational programmes at Maningrida homeland centres.

Chapter 5

The best vocabulary/dictionary yet produced for an Australian language is the Pintupi listing by Hansen and Hansen 1974. Other long word lists have been put out, but their quality is questionable.

5.1 Items in Capell's 1956:85–94 'Common Australian vocabulary' additional to those listed here are (i) verbs which go back to pA monosyllabic roots: *wu-*∼*yu-*∼*ŋu-ŋ* 'give', *dha-l* 'eat', *ŋa-l* 'eat', *ya-n* 'go', *bu-m* 'hit', *gaa-ŋ* 'carry, bring, take', *nhaa-ŋ* 'see, look at', *maa-n* 'hold in the hand' and *nyi(i)-n* 'sit' (see 12.2.2); (ii) verbs *waŋga-* 'talk' (found only in the west) and *bina-* 'hear' (cognate with the noun 'ear'); (iii) interrogatives *minha* 'what' and *ŋaan-* 'who' (see 11.4); (iv) onomatopoeics *waga* 'crow' and *bu-* 'to blow'; (v) regionally restricted forms such as *gabi* and *ŋaba* 'water'; (vi) a series of forms for 'nose' which Capell admits show great variation – *muru*∼*muyu*∼*mulu*∼*mulyu*∼*mudla*∼*mulya*∼*mila*∼*milya* etc. Note that Capell assigns a final *-ŋ* to *bina, jarra, jina, guna* and others; we discuss in 7.2.2 how in fact the addition of *-ŋ* to yield consonant-final words is an areally conditioned change that must have been considerably later than the pA period.

5.2 Heath 1978b provides a useful discussion of lexical classification in Nunggubuyu. The designations for 'bark water-carrier' and the appropriate tree do in fact belong to different gender classes in Dyirbal; the first is *balan nuba* and the second *bala nuba* (for some discussion of these gender classes, and their marking, see 9.2.1). For further discussion of the use of one lexeme to cover both 'potential' and 'actual' meanings see O'Grady 1960a. For discussion of grammatical marking that distinguishes between POTENTIAL and ACTUAL senses of a verb see Dixon 1972:91–2.

5.2.1 See O'Grady 1960a for names of kinds of sand. Astronomical beliefs and names are discussed in Stanbridge 1858; MacPherson 1881; Mathews 1904b:278–86; among other sources. A discussion of delocutive verbs, and references to other sources, is in Dixon 1977c; examples of verbs of giving are in Dixon 1973. Some further discussion of adjectives in Australian languages is in Dixon 1977b. Note also that there is some variation between different Australian languages as to the word class assignment of lexemes denoting adjectival concepts. Diyari, for instance, has adjectives for referring to physical properties but abstract nouns for human emotions and propensities – 'desire', 'fear', 'anger', 'sexual arousal', 'shame', 'friendship', 'jealousy', 'hunger' etc; these take on an adjectival function when placed in instrumental case and used with the verb 'to be' (Austin forthcoming).

Pintupi reference from Myers 1976:141–51; see also Morice 1978 and the good Pintupi dictionary by Hansen and Hansen 1974. Cf. also Hiatt 1978b. Quotations from Hale 1975:296, 311.

5.2.2 Schebeck 1978 gives further examples of metaphoric extension of body-part terms. For an excellent survey of Australian semantics, with special reference to metaphorical extensions, see Elkin 1937. C. H. Berndt 1951 is a useful account of figures of speech in Gunwinygu, while Austin, Ellis and Hercus 1976 discuss a particular figure of speech that has diffused over a widish area in South Australia.

5.2.4 For discussion of a putative universal set of semantic primitives see Wierzbicka 1972, 1980. More detailed discussion of the semantic structure of Dyirbal, as it can be inferred from Guwal–Jalŋuy correspondences, is in Dixon 1971, forthcoming-f.

5.3 Kuryłowicz 1964:11, 1945–9 discusses the general principle whereby when a form X is extended to take over part of the function of an existing form Y, then X will be likely to take over the primary function of Y, leaving Y with what was the secondary function.

5.4 For studies of loan words and meaning extensions to deal with introduced objects see O'Grady 1960b on Nyangumarda; Hudson and Richards 1976:79–82 on Walmatjari; Dixon 1972:325–7 on Dyirbal. Donaldson 1980 describes how final *d* occurs in Ngiyambaa only in loans.

Chapter 6

Allophones of English /r/ in North Yorkshire dialects from Ward 1945:144.

6.2 At least one language from the Cape York Peninsula, Koko-Bera, is best taken to have contrastive stress on monosyllabic words (which are not grammatically related): for example, *thápəl* 'big' versus *thəpél* 'hill'. However this is clearly just a development from an earlier stage in which vowel length was contrastive: if the initial syllable was long it became (or remained) stressed, whereas if it was short the following syllable became stressed. An example of a language with predictable stress, but where this does not fall on the first syllable, is Tiwi, where the penultimate syllable generally bears major stress. Yidiny has a number of phonological rules orientated towards ensuring that as many words as possible have an EVEN NUMBER of syllables – see Dixon 1977a.

6.3 The description of English vowels here is largely based on Catford 1977 and Ward 1945. Vowels in Australian languages can have overlapping realisation with, for instance, [ɛ] being an allophone of /a/ – in a palatal environment – and also of /i/ – in a non-palatal environment. A good description of this overlapping is that given by Donaldson 1980, for Ngiyambaa.

6.4.1 There has been much discussion of whether the difference between *d/t* etc. in English relates primarily to voice, or to aspiration, or to tenseness; Catford 1977:111–12 shows that it is voicing (or the narrowing of the glottis, which is associated with voicing) that is the crucial factor. It is in fact only necessary to postulate two nasal phonemes in English at the phonological level, /m/ and /n/; /n/ has allophone [ŋ] before /g/, and in certain forms a morpheme-final /g/ may be deleted by a late rule e.g. in *sing*, *singer*. It is usual in discussion of Australian languages to take the blade of the tongue as extending slightly further back than Catford 1977:145ff and other phoneticians might do; Catford would use the label 'anterodorsal-palatal' for what has been called by Australianists (since O'Grady 1966) 'lamino-palatal'.

6.4.4 A single rhotic is also found in the Western Torres Straits language (8.3); and also in Madhi-Madhi, a dialect of language H1 on map 7 in chapter 8. Note that all dialects of H1 have a contrast between two apical stops and nasals; all dialects except Madhi-Madhi probably have two rhotics. Madhi-Madhi has undergone changes *ṛ*>*rr*/V-V and *r*>ϕ/V-C.

In Yaygir *r* became voiceless *r̥r̥* after a long vowel, the length in the vowel then being lost; *r* remained unchanged after a short vowel (and *rr* remained unchanged in all environments). The third rhotic in Warlpiri, retroflex flap /rd/, developed from the apico-postalveolar stop /rt/ in initial and intervocalic position; it has only taken on the status of a separate phoneme, in contrastive distribution with /rt/, as a result of loans e.g. *wapirti* 'yam sp.' from Pitjantjatjara *wapurti* and *yarti* 'yard', *karti* 'card' from English.

6.4.5 Two *y* sounds are reported for Yinyjibarnrdi – lamino-interdental /yh/ and lamino-palatal /y/, exactly paralleling the stops and nasals.

6.4.6 The full consonant inventory of Kaititj and other Arandic languages is six stops, six nasals, six prestopped nasals, four laterals, two rhotics and three semi-vowels (front, back rounded and also back unrounded). Anguthimri has six plain oral stops (labial, dorsal, two laminals, apico-alveolar, and apico-alveolar with rhotic release), six corresponding prenasalised stops, glottal stop, five nasals, one lateral, two rhotics, two semi-vowels, and at least four – with possibly as many as six – fricatives/sibilants.

A classic account of the glottal stop as a syllabic prosody is McKay 1975 on Rembarrnga, from Central Arnhem Land.

6.4.7 G. A. Robinson's vocabulary of 'Pal-ler an mitter' is in his manuscript papers in the Mitchell Library, Sydney – LXV, part 3, 53–60, repeated in the third column of the table at LXV, part 6, 94–5. Mr T. W. Mitchell, M.L.A., has pointed out in personal correspondence that the name of the tribe was 'Pallanganmiddang', not 'Pallanganmiddah' as reported by his grandfather in Smyth's compilation.

6.5.1 A fuller discussion of pA laminals, with examples, is in Dixon 1970a. One apparent exception concerns the form of a common word for 'foot'. It is *jina* in single-laminal languages, *jina* in double-laminal languages from the far west coast of Western Australia, but *dhina* in many double-laminal languages from west Queensland, northern New South Wales and South Australia. A clue is provided by Dharawal, from the New South Wales south coast, where the form is *dhana*. This suggests an original form */jana/ which would have been pronounced [dhana]. The first vowel could have assimilated to the preceding laminal i.e. **a*>*i*. But in the Queensland region it appears that this assimilation FOLLOWED the emergence of a phonological contrast between laminals i.e. /dhana/>/dhina/; while on the west coast it preceded the phonologisation of the laminal opposition i.e. /jana/>/jina/. An original form */jana/ 'foot' is supported by the apparently cognate verb */ja-n/ 'to stand' – see 12.2.2. Peter Austin reports *ŋurnrda-* 'to lie', with a retroflex nasal after the *u*, in Dhalandji.

6.5.2 Another hypothesis concerning the origin of retroflex stop and nasal in Australian languages is due to Luise Hercus. We can note that modern languages show (intraroot) clusters whose first member is *l* or *rr* and second member is a peripheral stop or nasal, sometimes a laminal stop or nasal, but never an apical stop or nasal. It could be that pA allowed *l* or *rr* to be followed by ANY stop or nasal, but that a sequence *rr*+*d*/*l*+*d* has contracted to a single segment /rd/ in western languages, and similarly *rr*+*n*/*l*+*n* to /rn/ (note the synchronic rule *l*+*n*→*rn* in Walmatjari, 12.2.1). We would expect, on this hypothesis, still to encounter sequences of *rr*+*d* and *l*+*d* etc. in eastern languages which lack an apical contrast. We do not – Warrgamay is typical of single-apical languages in showing exactly the same cluster possibilities as double-apical languages (the *r*+*d*, *r*+*n* clusters in Guugu Yimidhirr are highly unusual, perhaps unique); a full discussion of phonotactics is in 6.6.2. No one has yet assembled cognate sets which would support the Hercus hypothesis. It could certainly be the explanation for at least SOME modern retroflexes; any new phonological contrast which evolves in a language is likely to be the result of convergent developments, from several different directions. (Graham McKay has supplied examples of vowel syncope and then the replacement of a sequence of *rr* plus *n* by the retroflex nasal *rn* in Gunibidji e.g. **barranmarabuya*> *baarnmarabuya* 'they(pl) swam', **birrinmarabuya*>*biirnmarabuya* 'they(du) swam'.)

Yir-Yoront, from the south-west of the Cape York Peninsula, is unusual in showing an apical contrast in stops, nasals and laterals and in being surrounded by single-apical languages. Barry Alpher believes that until quite recently there may have been a single apical series with predominantly retroflex articulation; loans from English may have been largely responsible for the establishment of an apical contrast – compare the indigenous /ŋard/ 'fish' with loan word /yad/ 'yard'. (This recent development in Yir-Yoront is not shown on map 5; see also Alpher 1972.)

6.5.2–3 Other examples of possible apical correspondences include *maDa* 'lazy; soft', *wiDa-* 'to singe; remove from fire', *waNa* 'long; tail', *buRNRDa* 'deep; mountain', *ŋaRNgu* 'beard; mouth' and *maRNu* 'neck'. There is in some cases a semantic difference between forms in different languages and more examples are needed in these and other cases to be certain that they are all valid cognate sets.

Note that in *maRNu* and *ŋaRNgu* we find *RN* before (not after) *u*, and before *gu* respectively. There is evidence that the laminal distinction is OCCASIONALLY conditioned by a PRECEDING sound; these examples could suggest that the apical distinction is in a minority of cases conditioned by the FOLLOWING segment. Note also the recent change, in Warlpiri and Walmatjari, of ergative **-lu*>*-rlu*, presumably also conditioned by the following *u*.

There are two exceptions to our generalisation. The very commonly occurring words *guna* 'faeces' and *bula* 'two' (often functioning as 3 du pronoun) ALWAYS show apical-alveolar nasal and lateral in double-apical languages, despite the preceding *u*. No explanation, along the lines of that suggested by *ŋu*+*na*, is known.

The evidence that pA had a single apical series is at present a little less strong than that for a single laminal series. But it does seem quite sufficient to provoke a working hypothesis of one apical stop, nasal and lateral in pA. It is possible that further research will provide an explanation for the apparent exceptions *guna* and *bula*. (They may in fact be related in some way to the antiquity of the apical split.)

6.5.3 There are possible cognate sets supporting _*ly_ > _l_ or _*ly_ > _j_:

Warlpiri	_mulyu_	'nose, beak, front end'	Dyirbal	_mulu_	'end (of anything)'
	walya	'earth, dirt'		_waja_	'mud'

(And compare cognates in Dhalandji, a double-laminal language: _mulha_ 'nose', _yalha_ 'dirt'). Note that there is here no factor that could be taken as conditioning a change _l_ > _ly_ or _j_ > _ly_. (These putative cognates require support from other languages before they could be taken as definitely related.)

Harold Koch has pointed that the region in which syllable-final _y_ occurs (the eastern third of the continent) roughly coincides with the area where _ly_ is absent (i.e. languages with a single lateral). He suggests that pA could have had both _ly_ and _y_ occurring in syllable-final position. Final _ly_ may have changed into _y_ in the east, reinforcing the original set of forms with final _y_. Different changes would have taken place in the west, with syllable-final _y_ being lost and final _ly_ retained. It would be worthwhile instituting a thorough search for cognates that show final _ly_ in a western and final _y_ in an eastern language; this has not yet been attempted.

6.6.1 Note that only two lateral-plus-stop clusters are attested for Pitta-Pitta, _-lhdh-_ and _-lyj-_; it is likely that _-ld-_ and _-rlrd-_ are accidental gaps in the smallish corpus available.

Australian languages do not, as a rule, show clusters of _r_ + _d_ or _r_ + _n_ – or in fact any cluster with an apical consonant as second member, save for homorganic nasal-plus-stop and sometimes also lateral-plus-stop. There is thus no possibility of confusion in using /rd/, /rn/ to symbolise single phonemes, apico-postalveolar stop and nasal, as we do for Pitta-Pitta and Pintupi. Guugu Yimidhirr is highly unusual in allowing a sequence of rhotic plus apico-alveolar stop/nasal; as pointed out these do in fact alternate with apico-postalveolar stop and nasal respectively.

In Guugu Yimidhirr there are two particles beginning in a vowel: _aa_, which signifies agreement, and _awuun_ 'that's the one, that's right, that's the way'. There is also a single form which ends in _w_, the exclamation _gaw_ 'hey!'.

6.6.2 Sample figures for frequency of occurrence of consonants in initial and final slots will be found in all grammars in the _Handbook of Australian languages_; and also in Dixon 1972, 1977a; Crowley 1978; among others. O'Grady 1966:91 details the recent changes that have led to the appearance of final stops in Yinyjibarnrdi; only apical /d/, /rd/ and laminal /j/ are permitted finally.

6.6.3 Mention of 'branches' for the split of [j]/[ly] into /j/ and /ly/, and at other places in this chapter, is quite gratuitous. No reputable subgrouping has yet been accomplished within the Australian family; it is greatly needed as a framework for discussion of the development from pA to modern languages.

6.7 Hale 1973a:405–13 discusses restricted vowel harmony in two dialects of Warlpiri and the way in which the full harmony in Warumungu can be regarded as a further generalisation from this. Perhaps the most complex vowel harmony is found in Nyangumarda. A further example is Djingili.

Languages without any productive vowel harmony often display a type of embryonic harmony in fitting loans from English into their phonological pattern. An English word that ends in a stop may have the vowel of the previous syllable repeated after it e.g. Warrgamay *ŋarrinyji* 'orange', *rubu* 'rope'.

6.8 See Catford 1977:13–14 for further arguments against the possibility of setting up a 'universal' inventory of phonetic or phonological features.

We use the term 'feature' where Trubetzkoy would refer to a 'member' of an opposition.

There have been a number of recent 'feature descriptions' that bear a superficial resemblance to Trubetzkoy's work – notably, the tradition based on Chomsky and Halle 1968. It seems to me that this work misses a number of vital distinctions, which were emphasised by Trubetzkoy, and generally produces a less revealing phonological description. Each opposition is held to be bilateral, and characterised in terms of '+/–', for instance. While being fully aware of work done in the Chomsky–Halle tradition, I prefer to work here in terms of a fairly strict Trubetzkoyan framework; however, some of the symbolisms, and tabular displays, have been freely borrowed from the Chomsky–Halle model. Note that Chomsky–Halle use 'feature' to describe an entire opposition; the sense in which I employ 'feature' corresponds to their 'value of a feature'.

6.8.1 The feature '±peripheral' is very close to '±grave' proposed on acoustic criteria by Jakobson, Fant and Halle 1963:29 and later justified on phonological grounds by Hyman 1973 and Vago 1976, among others. The only significant difference is that the open vowel *a* is normally regarded as '+grave' (like back vowels, and labial and dorsal consonants) whereas I regard it as '–peripheral'.

Some discussion of apicals as the unmarked series is in Dixon 1972:271–2. Discussion of the nature of *w*, supporting the argument that it relates equally to the labial and dorsal series, is in Ohala and Lorentz 1977.

6.8.2 Initial laterals are rather rare but where they do occur apicals are commoner than laminals, a possible counter-example to our generalisation. But laminal laterals occupy a rather marginal position in many of the phonological systems in which they occur; in 6.5.3 we mentioned how laminal laterals have been eliminated by recent changes in languages of the Ngayarda subgroup. Laminal laterals are not infrequently confined to intervocalic occurrence, the position that (in all languages excepting Banjalang) is open to every consonant in the inventory.

6.8.3 Our feature '±obstruction' is similar (if not identical) to the '±consonantal' of Jakobson, Fant and Halle 1963 and Chomsky and Halle 1968.

We differ from Trubetzkoy in treatment of the 'nasal/oral' opposition. Trubetzkoy 1969:165 considered this opposition to be privative, although he noted that it is only rarely neutralisable.

The feature '±sonorant', which serves to group together laterals, rhotics, nasals (and perhaps vowels) can be useful for specifying the class of syllable-final consonants in Australian languages; there are arguments for adding it to the set of features listed here.

There is one Australian example known of a semi-vowel changing into some other type of consonant: *y* > *r* in Anguthimri. One example of *m* > *b* is quoted in 7.1.1.

Chapter 7

Quotes from Capell 1956:2; Tindale and Birdsell 1941:7. The foundational work on Paman languages is in Hale 1964 and 1976c. See Alpher 1976b.

7.1.2 An abbreviated account has been given here of the changes affecting the vowel system of Yinwum; for a full account see Hale 1976c:12.

7.1.3 Accounts of metathesis, in languages other than those mentioned here, include Hale 1964, 1976c; Rigsby 1976; Sommer 1976b.

7.2 Discussion of vowel-final and consonant-final languages will be found in Hale 1973a:449ff, 1976b:416. Data on *-pa-* augmentation are in Hale 1973a:449ff; O'Grady, Voegelin and Voegelin 1966:114–18, 138–50, and O'Grady 1966:94.

7.4 The maximal stop–fricative inventory is probably found in the northern Cape York languages – see Notes to 6.4.6. Some languages from the southern part of the Cape York Peninsula also have fair-sized systems. Oykangand has five aspirated stops, five unaspirated stops, and three fricatives – bilabial β, lamino-dental ð, and dorsal ɣ. Umbuygamu, from the same region, has ten oral stops, a glottal stop and three fricatives.

In Yolŋu the two varieties of stop contrast only in medial position. The standard orthography – devised by Beulah Lowe and now in daily use in every Yolŋu community – writes voiced symbols for all initial stops and for non-geminate medials, and voiceless symbols for all final stops and for geminate medials.

The phonetic nature of the distinction between the two series of stops in Gupapuyŋu (and other languages and dialects of the area) is still under investigation. It seems that there are several interrelated factors – quantity, tenseness and probably also voicing (or delayed onset of voicing); the phonetic distinction may well vary depending on whether the stops occur between vowels, between *l* and a vowel etc.

Chapter 8

8.1 Quotes from Grey 1841:II, 208,210; Schmidt 1919:4. Schmidt does not mention Nganyaywana, which would presumably be for him a language of the northern type occurring in the southern area. He also has Guugu Yimidhirr, a typologically normal language, in the northern area, although he does discuss its relationship to southern languages. A few nonPN languages have wider phonotactic possibilities than those we have described (which do apply to all PN and most nonPN systems); Murinypata has among the widest possibilities – 19 consonants can occur initially and 20 finally (out of a total inventory of 23 consonants).

Tiwi has a normal Australian phonemic system – two apical and one laminal series, two (apical) laterals, two rhotics, two semi-vowels (and also a velar fricative /ɣ/). All words end in a vowel, and the only medial clusters are homorganic nasal-plus-stop. This language is probably unique in Australia in having no case inflections of any type; local relations are shown by prepositions. It has the most complex polysynthetic verb structure of any Australian language. The isolation of Tiwi on Melville and Bathurst Islands for some thousands of years (the average Tiwi man would visit the mainland perhaps once or twice in a lifetime) would account for its unusual features; if it was a member of the Australian family, it may have changed to such a degree that it is no longer possible to discern enough systematic correspondences to prove the relationship.

Djingili is one of the few nonPN languages that has no prefixes to lexical roots. It may possibly be related to neighbouring languages such as Ngarndji and Wambaya, on which scarcely any information is currently available. Once further work on all of these languages is completed, it should be possible to investigate more thoroughly the possible genetic link between Djingili and other Australian languages. There are just a few other nonPN languages for which little information is available; it has not yet been possible to make any judgement as to whether they belong to the Australian family.

Information on sea levels from Chappell 1976, Jennings 1971. Routes by which early peoples could have reached Australia are summarised in Birdsell 1977. For discussion of the figure 2,200 years as a minimum time for the whole continent to be populated see Birdsell 1957:65.

8.2 Almost all source material on Tasmanian is collected in Plomley 1976. For a full linguistic assessment of this material, see Crowley and Dixon forthcoming. For anthropological discussion of the Tasmanian tribes see R. Jones 1971, 1974. Curr 1886:III, 596 gives seven words that may be cognate between Tasmanian and Australian; it is hard to add much to this list. (Note that for six of these forms Curr was also able to find what were to him plausible cognates in African languages.)

8.3 People living in those western Torres Straits islands which are nearest mainland Queensland (now almost died out) are thought to have been more Australian in physical type. The Darnley Island dialect of the Eastern Torres Straits language (which is geographically closest to the Western language) is said to have had a velar nasal. For a recent survey of the Torres Straits situation see Walker 1972:307–43, 367–97. Dates for proto-Indo-European from Mallory 1976; for proto-Bantu from Phillipson 1976. Swadesh 1946 is a useful sketch of Eskimo; Benjamin 1976 is a good sketch of Temiar, a typical archaic Mon-Khmer language.

Connections between Australian and Malayo-Polynesian/Papuan in Latham 1845; with Dravidian (pointed out by Norris) in Prichard 1847:277–9; with various African languages in Bleek 1872; Clarke 1878; Curr 1886. The Andaman hypothesis was put forward in von Carolsfeld 1890 and Gatti 1906–9. A full survey of suggestions made about the genetic links between Australian and other language families will be found in Ray 1925; to Ray's list can be added Pratt 1886. Greenberg 1971 employs eleven grammatical criteria – Tasmanian satisfies only one of these. Of the 84 lexical items Greenberg lists, putative Tasmanian cognates are mentioned for less than 25 per cent; none of them is convincing. The Dravidian link was discussed by Caldwell 1856. For information on Dravidian phonology see Emeneau 1970. Information on the Ndu family of New Guinea is in Laycock 1965.

8.4 Discussion of Macassan visitors to Arnhem Land is in Macknight 1976. Macassan loans into Australian languages are discussed in Jennison 1927; Schebeck n.d.:52, Capell 1965; Macknight 1972, 1976:88–90. Note that G. W. Earl, in 1842, commented that Arnhem Landers addressed Europeans in a pidgin that included many Macassan words; this was presumably a trade language they used for communication with Macassans.

Initial dropping in Cape York is discussed in Alpher 1976b. Note that language L (and perhaps also K) have just a sprinkling of words ending in a consonant; they may well be like F2 in permitting consonants only at the end of affixes, not roots. Among the few examples of final consonants, *ŋ* is, as we should expect, strongly represented. There are odd exceptions to the generalisations made here e.g. just one word ending in *m* is known for language Q. Mbabaram, to the west of Yidiny and south of Gugu-Yalanji in map 8, does have some words ending in *m* and in *ŋ*; however Mbabaram has recently undergone sweeping changes which have resulted in both the beginnings and ends of words being lost, and it is probably these changes that have exposed final peripheral nasals.

Other phonological features that are found over a geographically defined area are a distinction between fortis/lenis stops, in Arnhem Land, and the occurrence of /r/ at the ends of words (in several areas). Whereas ergative inflection *-dhu* ~ *-dji* is obligatory on all nominals in A function in other Yolŋu languages, in Djinaŋ it occurs very infrequently in this function, generally when the sentence would otherwise be ambiguous. Capell 1956:36–45 discusses noun (gender) classes in the Arnhem Land block. Heath 1978a has a full account of non-lexical diffusion in south-east Arnhem Land – the factors favouring diffusion are listed on pp 104–8; see also Heath 1979.

Discussion of cultural diffusion in Mulvaney 1976 and McCarthy 1939. Genetic example taken from Birdsell 1950.

8.5 The areal tendency to reanalyse pA monosyllabics as disyllabic roots is just beginning to reach Guugu Yimidhirr. John Haviland reports that speakers of the southern dialect are beginning to use *wudhi*+*la* for the imperative of 'give', in place of the regular form *wu*+*waa*; they are working in terms of a new root *wudhi-l* (note that both *wu-m* and *wudhi-l* would give past tense *wudhi* – full details are in 12.2.1). Fuller discussion of the 40–60 per cent 'equilibrium level' is in Dixon 1972:330–7. Lexicostatistic figures from Swadesh 1951. The dermatoglyphic comparison of fingerprint patterns is in White and Parsons 1973.

8.6 Quote from Schmidt 1919:25. The tri-hybrid hypothesis is set out most fully in Birdsell 1967; for a more detailed discussion of how the Barrinean hypothesis might correlate with language boundaries in one area, and explain certain legends, see Dixon 1977a:15–16. The lexicostatistic classification was first published in O'Grady, Voegelin and Voegelin 1966 (quote from pp 24–5); it has been reprinted with slight revisions in Sebeok 1971 and Wurm 1972. Quotes from Schmidt 1919:77; Wurm 1972:9; Boas 1940:212; Kuryłowicz 1970:429.

Chapter 9

Murinypata is an example of a language in which the ergative inflection is used only when information about which NP is in A and which in O function is not inferrable from (i) the semantic nature of the NPs and of the verb, or (ii) the cross-referencing verbal prefixes; see Walsh 1976a, b; Dixon 1979.

9.1 For some Australian languages – e.g. Kalkatungu (see 10.2), Ngandi, Gumbaynggir – an additional word class covering 'kin terms' is needed. Individual languages can show other variations on the typical pattern given here.

9.2.1 Dixon 1977a:480–96 includes a full account of generic nouns in Yidiny, and references to literature on generics in other languages of far North Queensland. For further details of noun classes in Australian languages see Capell 1956:36–45 and Dixon 1968.

In some languages there are different forms of case inflections depending on whether a noun has human or non-human reference (Kurtjar is of this type); this can also be used as a grammatical criterion for distinguishing nouns from adjectives – an adjective can take EITHER allomorph.

9.2.2 Dixon 1977b includes discussion on the size of adjective classes in Australian languages, compared with those in languages from other families. We use 'basic colour term' in the sense of Berlin and Kay 1969; Dyirbal, Warlpiri and many other languages have just two colour adjectives, while Diyari has four.

Perhaps the strongest set of grammatical criteria for distinguishing nouns from adjectives apply in Diyari: (i) only adjectives can take the inchoative verbalising suffix; (ii) nouns and adjectives take different intensifiers; (iii) nouns are subcategorised for gender; (v) adjectives follow nouns. (Diyari has, for an Australian language, unusually strict word order.)

9.3 For details of pronominal systems that involve a paucal/trial member see Mathews 1902a, 1903b, 1904c; Hercus 1966; and grammars of Wemba-Wemba, Worora, Ungarinyin, Nunggubuyu, Murinypata. Yidiny has a dual in first but not in second person (there are no non-singular third person forms); Dhuwala/Dhuwal has a dual in first and third but not in second person. Discussion of complex, kin-determined pronoun systems is in Hale 1966b; O'Grady, Voegelin and Voegelin 1966:88, 131; Schebeck, Hercus and White 1973; Strehlow 1944. Ngandi and Warlmanpa are the only other languages known to have one form covering both 'who' and 'what'.

9.4.4 Dyirbal has a number of pairs of adverbs that differ only in their syntactic orientation. Thus *ganbi-l* is 'do badly' with subject orientation, so that with *jaŋga-y* 'eat' we get *ganbi-l jaŋga-y* 'eat sloppily'; *dara-l* is 'do badly' with object orientation so that *dara-l jaŋga-y* would be 'eat something unsatisfactory' (e.g. eat something stale when there is nothing else available). See Dixon 1976b, forthcoming-f.

9.5.2 Comparison of the semantics of time qualifiers in several Australian languages is in Dixon 1977a:498–9.

9.6 Examples of clitics that comment on the truth-value of a sentence are found in Dyirbal (Dixon 1972:122–3) and the Western Desert language (Douglas 1964:119–21; Trudinger 1943:222–3) amongst others.

9.7 'Nominative' was until recently used in place of 'absolutive', to refer to the case that covers S and O functions in an ergative-type system. It is now usual to employ 'absolutive' as the complement of 'ergative', with 'nominative' being used just to refer to the complement of 'accusative', usage which we follow throughout this book.

In addition to transitive and intransitive sentences, Australian languages also show 'equational' constructions. These typically involve an NP as topic with a noun or adjective comment (e.g. 'my mother widow' or 'that animal big'). Most Australian languages lack any verb 'to be', and equational sentences do not show tense-type inflection.

There is a fuller discussion of ergativity in Australian languages – at both the morphological and syntactic levels – and the possibility of change from one type of system to the other in chapter 13; see also Dixon 1979. Silverstein 1976 contains many examples of split case systems; the hierarchy accounts for predominant patterns of case split, although there are sometimes minor irregularities that cannot properly be 'explained' (e.g. Gumbaynggir – see 11.1.3).

Chapter 10

I recognise two distinct nominal cases, with identical realisations, whenever (i) demonstratives and/or interrogatives show two different forms corresponding to a single nominal inflection; and/or (ii) the two cases have quite different syntactic possibilities, cf. 13.3. This differs a little from the conventions of traditional grammar, which would insist on a single case, with two functions, under (ii) at least. That is, a traditional grammarian would set up a single ergative–instrumental case, and would talk about 'core function' (my ergative case) and 'peripheral function' (my instrumental). This difference in terminology carries no significant theoretical repercussions.

Note that some individual verbs may effectively require a peripheral NP (e.g. 'put'); this is a property particular to individual verbs, contrasting with constraints on the inclusion of core NPs – an NP in S function is obligatory for all intransitive verbs, and A and O NPs are obligatory for all transitive verbs.

10.1 There are a few minor details concerning the form of YIDINY inflections that have not been gone into here. For instance, dative is *-nda* after a stem ending in a vowel, lateral or rhotic; it is *-da* after *n* or *m*, and *-nda* after *ny* with deletion of the *ny*. After a stem ending in *y*, dative is always *nda* but *y* will drop from a stem with an odd number of syllables. Details of this sort add nothing to the general picture of case functions and their canonical realisation. A full account of Yidiny case inflections is in Dixon 1977a:124–42. The details of long vowel occurrence in Yidiny words is explained in Dixon 1977a:42–101.

10.2 DYIRBAL: There are two further variants of ergative–instrumental. The postvocalic allomorph *-ŋgu* is reduced to *-gu* after a stem that has three or more syllables – thus *yara* 'man', ERG *yara-ŋgu* but *waybala* 'white man', ERG *waybala-gu*. The postconsonantal allomorph is *-du* after a nasal or *y*, with assimilation (as in Yidiny); but after a stem ending in a liquid (*r*, *rr* or *l*) it is *-ru* with deletion of the liquid e.g. *waŋal* 'boomerang', INST *waŋaru*. (Taking the underlying form of ergative as *-du* we would need a morphophonological rule *-l* + *d-* → *-r-*. Note that if *l* and *d* come together at a reduplication boundary in Guugu Yimidhirr this is exactly the rule that applies, quite productively, e.g. *waadal* + *dal* → *waadaral*.) Note that accusative *-nya* must obligatorily be added to proper nouns in O function in the northern dialects of Dyirbal; it appears to be optional in southern dialects. Criteria for distinguishing allative and dative–purposive as distinct cases are in Dixon 1972:236.

KALKATUNGU: There are limited non-local functions for both locative-a (e.g. 'I dreamt OF YOU') and allative-a ('the policeman is good TO YOU PEOPLE'); locative-b and allative-b are confined to local functions (and do not in any case occur very frequently). One of the monosyllabic forms that inflects irregularly is exemplified in (22) of 13.4.1, *maa* + *ji* 'food + DATIVE'. Note that kinship nouns decline on the pattern of non-singular pronouns.

WESTERN DESERT: For some dialects *-pa* could be regarded as an allomorph of absolutive case, on consonant-final common nouns, since this is the only occurrence of *-pa* in the grammar. There is a further case inflection which indicates 'origin' (e.g. 'I got the kangaroo OUT OF THE FIRE'); in the Ngaanyatjara dialect this is formed by adding *-tja* to the locative form of a common noun and *-martatji* to the locative form of a proper name. Blake 1977 provides a full survey, with extensive exemplification, of Australian case systems.

10.3.1 Paul Black points out that in Kurtjar the causal resembles the modern genitive *-ŋint*, optionally FOLLOWED by ergative *-ak*, thus *-ŋint*(*ak*).

10.3.2 Hale's hypotheses was put forward in Hale 1976b. Some of the languages that have undergone drastic phonological changes have *-l* ~ *-ŋg*, or even *-ɣ*, as reflexes of original *-lu* ~ *-ŋgu*. Examples are quoted in Hale 1976c.

Ergative and locative inflections, previously distinguished only by the quality of the final vowel, have fallen together in some languages that have dropped or neutralised final segments (e.g. Aranda and Wik-Munkan), or where vowel harmony has been introduced. In Ngawun, for instance, ergative and locative are both *-ŋgV*, where *V* takes the same value as the last vowel in the stem.

In many language families outside Australia it can be shown that syntactic cases have developed out of local cases. However, the hypothesis that pA had, say, an original ABLATIVE *-lu*, later extended to ergative, and an original ALLATIVE *-gu*, later extended to dative–purposive, cannot be supported. This can be seen from careful examination of modern case systems (those given here, and others) and from the extensive changes that would be needed to derive modern systems from such a proto-arrangement, compared with the fairly straightforward shifts needed from the pA system we suggest. It may well be that pA ergative and dative–purposive DID go back to local cases, but if so this was in a much earlier stage than pA, which we cannot hope to reconstruct.

A possible syntactic explanation for why instrumental coincides with ergative in some Australian languages, and with locative in others, is in Dixon 1977a:435–9, 1976a:411–14; 1972:188–190.

10.3.3 The inflection *-gu* in Nyawaygi also covers allative function e.g. 'you go INTO THE HOUSE', 'I jumped across TO THE ROCK'; other examples of dative–purposive function include 'I'll look FOR WALLABIES', 'I'm thirsty FOR WATER', 'he laughed AT ME'. The most frequent construction with verbs of giving in Nyawaygi, as in a number of other Australian languages, is for the giver to be in A function, the recipient in O function, and the gift to be marked by instrumental case. (This construction also occurs in Dyirbal, as an alternative to that exemplified by (28)). In other languages both recipient and gift can be in absolutive case.

10.4 For examples of the form and semantic range of comitatives in twenty-one Australian languages, see the symposium papers on this topic in Dixon 1976a: 203–310.

Chapter 11

11.1.1 Mary Laughren reports that the younger generation of Warlpiri speakers tend to use as ergative forms of the sg pronouns *ngaju*+*ngku*, *nyuntu*+*ngku*, and as genitive forms *ngaju*+*kurlangu*, *nyuntu*+*kurlangu*; these involve the productive nominal affixes for ergative and genitive (see 10.2) applied to pronominal roots *ngaju*, *nyuntu*, providing further support for our conclusion (in 11.1.3) that Warlpiri grammar is being simplified by analogising nominal inflections to apply to pronouns. These forms could be added, as a fourth line, to the table on p. 349.

11.1.2 Just a few languages have *ŋali* as 1 du excl pronoun; these include Garawa, where 1 du incl is *nuŋgala*, and a group of contiguous languages in South Australia, Ngamini (1 du incl *ŋalku*), Diyari and Yandruwanhtha (both have 1 du incl *ŋaldrra*). The discussion in this section of possible changes in 2 du e.g. *NHubala* > Warrgamay *nyubula* is ad hoc and verging on the gratuitous. These changes would need detailed justification in terms of whatever systematic phonological shifts can be documented for the languages in question.

11.1.3 For more examples of *-NHa* and its syntactic function in a variety of languages see Dixon 1970a:94–7; Blake 1977:13–15.

11.1.4 No explanation can at present be given for the vowel length in Gumbaynggir 2 sg *ŋiin*; note that length does not occur in the dative form *ŋinu* (it is most likely to be a recent development in this one language). Monosyllabic *ŋay* and *ŋin* also occur in Gabi, and *ŋay* in Banjalang. The original dative forms, such as 2 sg *nyingu*, in Ngarluma, now have accusative function, under the grammatical realignment described in 13.4.2.

There is just one modern language known to have forms that are suggestive of an original ergative inflection on n-sg forms such as *ŋali*. Wangkumara has ergative -*ŋu* marking A function with all n-sg pronouns, and it has 1 sg A *ŋathu*, S *ŋanyi*; 2 sg A *yunrru*, S *yini*.

The 2 sg S form *yini* in Diyari provides evidence for a pA form **nyin*. *yini* may be derived from *yini*(< **nyin*) + *ni*, paralleling 1 sg form *ŋani* (*< *ŋay* + *ni*). Other core forms of sg pronouns are 1 sg O *ŋanha* (< **ŋay* + *nha*), A *ŋathu* (< **ŋay* + *thu*); 2 sg O *yinanha* ~ *yinha* (**yin* + *nha*), A *yundrru* (< *yundu* < **yun* + *du*). Note that the vowel *u* occurs in the first syllable of only the A form for 2 sg, the form that does have *u* (from ergative inflection) in the second syllable.

There is an extensive discussion of the evolution of the quite irregular pronoun paradigm in modern Yidiny, from the pA forms suggested here, in Dixon 1977a: 172–6. That discussion assumes an original 2 sg **nyun*. Working instead in terms of **nyin* (which recent research has shown to be prior to *nyun*) we would get assimilation yielding A **nyin* + *du* > *nyundu* and genitive **nyin* + *nu* > *nyunu*, but O **nyin* + *NHa* would retain the original *i*. In the modern language the original O form has been replaced by an accusative based on genitive *nyuni* (< **nyunu*) i.e. *nyuniny*; the effect of this replacement has been to ensure that all 2 sg forms commence with *nyu*-.

11.1.5 See notes to 11.1.1. Information concerning pronominal usage at Yirrkala from Frances Morphy; quotation from Laughren 1977: 14.

11.1.6 Minimal/augmented pronominal systems were (to my knowledge) first described by Conklin 1962: 134–6 for the Philippine language Hanunóo. Gunibidji, another prefixing language from Arnhem Land, appears to operate with both minimal/augmented and also sg/du/pl pronominal systems; see McKay forthcoming. The account of referential properties of Yidiny pronouns is slightly oversimplified here; for a full account see Dixon 1977a: 165–7.

11.2 Pitta-Pitta masculine/feminine forms of third person pronouns/demonstratives parallel those for Diyari and Banjalang; they are masc *nhu*(*wa*)- and fem *nhan*(*ba*)-. There are just two occurrences of 3 sg forms commencing with *ŋu*- in the east. Gunggari has *ŋula*, corresponding to *nhula* in Margany and Gunya, other dialects of the same language, and there are other instances of the change **nh* > *ŋ*, at the beginning of a word, in Gunggari. It appears that the change which we posited to relate forms like *ŋunha* in western languages to **NHu*- has applied independently, and quite recently, in the Gunggari dialect. And *ŋulu* occurs in Kuuku-Yaʔu, from North Queensland, while Umpila – another dialect of the same language – shows *nhulu*.

11.3 Most languages with the general rule 'first person clitic before second person, second person form before third person' have some exceptions. In Western Desert, for instance, the 2 sg SA clitic -*n* occurs finally even when coupled with a third person enclitic (see also Glass and Hackett 1970: 48–9).

The Ngiyambaa forms have been simplified slightly. Note that in Ngiyambaa *DH* and *NH* are realised as lamino-palatal *j* and *ny*, roughly, AFTER a stem-final *i* or *y*, and as lamino-dental *dh*, *nh* elsewhere. Full details of Ngiyambaa pronouns and phonology are in Donaldson 1980. The third person pronoun can also be used to indicate definiteness in Aranda (Strehlow 1944:57–9; Yallop 1977:112).

Steele 1977 suggests that the order in which clitics occur in modern Uto-Aztecan languages does not necessarily carry implications about word order in some earlier historical stage, corresponding to our observations about clitics and word order in the Australian family.

Warluwarra does in fact have just one bound pronoun *-inda*, added only to kinship nouns and meaning 'your' (cf. free forms 2 sg dative *yinda*, genitive *yindaŋu*). The Walmatjari data have been slightly simplified; morphophonological rules in fact yield, for the auxiliaries in (10) and (11), *marnantarla* and *mantarrangurla* respectively. There are two other types of auxiliary suffix – a dubitative aspect marker, which can occur immediately after the modal root, and a reflexive/reciprocal marker, which can come at the end of the auxiliary; and there are some minor instances of suffix order being reversed. Full details are in Hudson 1978.

11.4 Comparison of indefinite–interrogatives between dialects of Dyirbal is instructive:

	'who'			'what'
	A	S	O	
Girramay dialect	*wanyju*	*wanyunya*	*wanyunya*	*wanya*
northern dialects	*wanyju*	*wanya*	*wanyuna*	*minya*

It seems likely that Girramay has eliminated the original 'what' form *minya* (conceivably due to taboo) and transferred the original S 'who' form *wanya* as the new 'what' root ('what' roots take normal nominal inflections, in each dialect). Girramay has now generalised the original O 'who' form *wanyunya* also to cover S function.

Languages in which *miNHa* 'what, something' inflects irregularly include Warrgamay and Ngiyambaa; those in which *miNHa* 'meat, (edible) animal' inflects irregularly include Jabugay, Koko-Bera and Yir-Yoront (see also Sommer 1976c:146).

Chapter 12

12.1 For examples of ROOT + TRANSITIVISER + REFLEXIVE + TRANSITIVISER in Dyirbal see Dixon 1972:98. Attention was first drawn to the 'bivalent suffix *-gu*', that can occur as an inflection with nominals and with verbs, by Capell 1956:77–9. See also the symposium papers on this topic in Dixon 1976a:421–82.

12.2 A number of phonological rules apply to the surface forms of Yidiny words. One lengthens the vowel in the penultimate syllable of any word that has an odd number of syllables. Another can, under certain quite complex conditions, delete the final syllable of a word that has an odd number of syllables. Thus in (4) of 12.4 the underlying past form *gunyji* + *nyu* is reduced to *gunyjiiny*, whereas in (5) there are no changes affecting past *gunyji* + *ŋa* + *l* + *nyu* (which has an even number of syllables).

12.2.1 Full details of the Walmatjari verbal system are in Hudson 1978. Note that conjugation 2 monosyllabics 'hit', 'give' and 'cry' could be represented as *pV-*, *yV-*

and *lV*- respectively, where *V* is specified as 'high vowel'; *V* would then take the value *u* before *ŋ*, and *i* before *ny*. However, comparative evidence from other languages prefers representation as *pu*-, *yu*- and *lu*-.

Guugu Yimidhirr is like most eastern languages in not permitting *i* to be followed by syllable-final *y*; at the end of a word *y* is simply dropped after *i*. Thus, past tense is effectively *ϕ* with a root from class 1 that ends in *i*. Note also that the underlying past form *maanay* of *maa-n* 'take' is reduced to *maani* (*maa . . . nay* appears in the reduplicated form *maa* + *naar* + *nay*).

In Nyawaygi, *nyii*- and *yuu*- do in fact have different perfect forms (this is one of the inflections not included in table 12.4), *nyiiginya* and *yuuninya* respectively. Data on Nyawaygi were gathered by me from the last speaker, over a period of fifteen years; less than 100 verbs have been obtained in all. It is likely that a larger corpus might show one or two intransitives in the *l* class and one or two transitives in the *ϕ* class.

We are giving labels to conjugations in some modern languages on a comparative basis. For instance, the Warlpiri conjugation that relates to the pA *rr* class has allomorphs commencing with *rn* or *ϕ* in the modern language (not in *rr*); and the conjugation described by Donaldson as the *rr* class in modern Ngiyambaa is clearly related to the pA *n* class (allomorphs commence with *rr* or with *n*).

12.2.2 Evidence from just two or three modern languages might suggest relating *NHaa-ŋ* and *ŋu-ŋ* to a separate class from *gaa-ŋ*, *lu-ŋ* in pA. In Kurtjar (an initial-dropping language from the southern part of the Cape York Peninsula), for instance, one conjugation contains only *a*- (< **NHaa*-) 'to see', and *o*- (*< *ŋu*-) 'to give'. But this differs from the Kurtjar *ŋ* class only in that *a*- and *o*- lack the initial nasal from most inflections (potential *-g* versus *-ng*, purposive *-jog* versus *-nyjog* etc.) and in having perfective *-gal* as against *-l*. It is likely that nasal dissimilation (7.5) has been responsible for most of these variations from the regular *ŋ*-conjugational pattern. Compare with the optional loss of *-ŋ*- after *nya*- in Walmatjari (and the loss of the synchronic reflex of the conjugation marker *-ŋ*- after *ŋu*- 'give' and *ŋaa*- 'see, look' in Ngiyambaa – mentioned in 7.5). Reflexes of **NHaa-ŋ* do behave EXACTLY like regular *ŋ*-conjugation verbs in the great majority of languages e.g. Warlpiri, Garadyari, Nyawaygi, Guugu Yimidhirr, Warumungu, Dhuwala/Dhuwal.

Evidence that the original forms for 'stand' and 'lie' were **DHaa-n* and **ŋuu-n*, involving long vowels, is provided by the forms *dhaarra-y* 'stand' and *ŋuurra-y* 'lie' in modern Yolŋu languages; these disyllabic forms are presumed to relate to the original monosyllabics (note though that 'sit' is *nhina-y* in Yolŋu, without a long vowel). The modern Mbabaram roots *nɛ*- and *nɔ*-, mentioned in 12.2.5, plainly reflect *jana*- and *wuna*-, with short vowels (although other modern Mbabaram forms do show an initial vowel, which reflects an original long vowel e.g. *aŋal* < **waaŋal* 'boomerang'). It may be that the long vowels in **DHaa-n* and **ŋuu-n* were shortened at an early stage in some branches of the family.

12.2.3 Hale 1970 has described how Australian languages typically have two open conjugations, which he says are characterised by zero conjugation marker for the predominantly intransitive class, and marker *l* for the predominantly transitive class.

He then suggests that *l* is a relic of an old passive suffix, taking this as evidence that the ancestor language had an entirely accusative morphology and syntax with modern ergative constructions being atrophied passives.

There are very many objections to this theory. Mentioning just those that relate to this chapter, we can note that the intransitive class basically has marker *y*, not *ϕ*, but that for phonotactic reasons this *y* has dropped, without trace, in many western languages (those with which Hale is most familiar). Although the *l* class has most often developed into the open transitive conjugation this is not always the case – sometimes the *rr* class or the *n* class has taken on this role; and the *l* marker is still maintained in languages that distribute roots pretty equally between the five or six conjugations. If this *l* is a relic of some passive suffix in an early language, what explanation could be given for markers *rr*, *n*, *ŋ*, *m* and *y*?

12.2.5 Haviland 1979a:83, 85–7 gives other examples of changes that signify simplification of conjugational patterns among younger speakers of Guugu Yimidhirr. The replacement of a monosyllabic by a disyllabic root can be seen in progress in the Mantjiltjara dialect of the Western Desert language; there are two stems for 'to eat', *ŋalku-* is used for present, irrealis and admonitive, while *ŋala-* is used for past etc. These are the original future and imperative forms of the erstwhile monosyllabic root *ŋa-l*; interestingly, *ŋalku* is used without suffix for future and *ŋala* without suffix for imperative.

12.2.7 There are a number of papers on 'conjugation by auxiliaries' in nonPN languages in a conference symposium on this topic, Dixon 1976a:614–740.

12.3 A number of papers on this topic are in Dixon 1976a:614–25, 740–63.

Chapter 13

13.1 Fuller discussion of these topics will be found in Dixon 1979.

13.2 Languages for which it has not proved possible to make statements concerning underlying order include Ngiyambaa. A language in which interrogative words must occur in sentence-initial position is Diyari; in Dyirbal and Yidiny they may occur anywhere, although initial position is the preferred one. Oykangand appears to be developing in the same direction as Kuuku-Yaʔu.

Australian languages allow a good deal of ellipsis, of all types of sentence constituents. In many languages NPs in A, S or O function may be omitted from the surface representation of any clause; information about these NPs may be inferrable from the context or from preceding clauses or may be simply unspecified (just as in English we can have *John has eaten* or *John was hit*). Individual languages do show different types of constraints on ellipsis (see comments on Dyirbal in 13.3.2).

13.3.1 The account of the transitiviser in Yidiny given here is slightly simplified; a full description of the syntactic and semantic factors which condition S→A or S→O interpretation will be found in Dixon 1977a:302–18. Blake 1977:41–3, 49–50, 54 discusses transitivising processes that can place dative, instrumental and locative NPs into a derived core function.

13.3.2 A less frequent variant of the antipassive in Dyirbal has the underlying O NP marked by instrumental case. Some of the criteria for considering an antipassive sentence to be intransitive are given in Dixon 1972:150–1, 97. Dyirbal suffix *-yirri-y* in fact functions (i) as a reflexive marker, and (ii) as an antipassive suffix, with the same syntactic possibilities as *-ŋa-y*; there is a semantic difference – a *-ŋa-y* antipassive refers to an actually occurring but a *-yirri-y* antipassive to some potential event (Dixon 1972:91–2).

There is a further sense of *-Vji-n* in Yidiny, to mark an action as 'continuous'; a full account is in Dixon 1977a:277–93; cf. also Dixon 1979. Another modern reflex of **-DHirri-y* is the passive/antipassive suffix *-ji* in Gugu-Yalanji – see R. Hershberger 1964a:45ff. For a full account of *-Vdhi* in Guugu Yimidhirr see Haviland 1979a:121–34. The prefixing language Mangarayi shows reflexive-reciprocal *-yi-* ~ *-jiyi-* ~ *nyjiyi* and mediopassive *-yi-* ~ *-ji-*; both could be reflexes of **-DHirri-*.

13.4.1 Kalkatungu examples and interpretation based on Blake 1979b. Note that the final syllable on *lhayi* in (18) and *dhuyi* in (21)–(22) is not to be regarded as the antipassive marker; this basically occurs on all verb roots in main clauses except those in future inflection. Note also that the verb *yagabi-* means 'to hear, listen to' when used in construction-type (i) but 'to understand, be able to hear' in (ii); and that *ŋanhdhama-* means 'to find' in (i) but 'to look for' in (ii).

Modern Pitta-Pitta does show an antipassive construction (that is clearly different from the construction we have suggested may have existed in some past stage of the language, as genesis for present-day inflections in future clauses); the deep A NP takes (non-future) S marking, deep O takes dative case, *-gu*, and the verb bears a derivational affix *-li* ~ *-mali* (cf. reflexive-reciprocal verbal suffix *-mali*).

Nyamal appears to be similar to the Yukulta system described here, although it is on the opposite side of the continent – see Klokeid, 1978:588. Blake 1977:16–27, 49 includes discussion and exemplification relevant to this section.

13.4.2 The details of passive given here refer to Yinyjibarnrdi. In Ngarluma, the passive verbal suffix has the form *-ŋali*, and passive agent NP is marked by *-ŋga* ~ *-la* (identical to locative–instrumental). Note that in Lardil zero (nominative) case inflection is found only on nouns and third person pronouns filling O slot in an imperative construction; a first person imperative object does take accusative form (see Dixon 1979 for discussion of this).

13.5 For details of subordinate clause marking in Warlpiri see Hale 1976a; in Western Torres Straits language see Ray 1907. Discussion of 'adjoined' and 'embedded' relative clauses in Australian languages is in Hale 1976a; see also the critical discussion in Dixon 1977a:416–28. Further criteria for and discussion of the connection between possessive phrases and relative clauses in Dyirbal will be found in Dixon 1972:176–84. Some languages in the western part of the Cape York Peninsula use interrogative forms as markers of relative clauses e.g. Sommer 1972: 55–9, 131–7.

13.6.1 Dyirbal has a further syntactic device, for linking two clauses which have a common NP that is in surface A function in the first and surface S or O function in the second – the verb of the second clause bears inflection *-ŋurra*; for full details see Dixon 1972:77–9.

13.6.2 For a full discussion of switch-reference marking in Diyari see Austin forthcoming. There are many other interesting features of this grammatical device that we have not touched on here; for instance, two NPs count as coreferential if the first (in the main clause) is referentially included within the second (in the subordinate clause) – thus in 'I want us two to talk Diyari to each other' the verb 'talk' bears same-subject purposive inflection *-lha* while in 'we two will go so that I can talk to him', the verb 'talk' bears different-subject purposive inflection *-rnanhthu*. Unlike passive/antipassive, switch-reference marking effectively defines a 'fourth person' (similar to obviative in Algonquian languages) e.g. 'after he$_i$ came in he$_i$ left' (identical subjects) and 'After he$_i$ came in he$_j$ left' (different subjects) would be clearly distinguished. For discussion of switch-reference marking in languages from outside Australia see Jacobsen 1967.

LANGUAGES AND SOURCES

This listing comprises both an index to the languages mentioned in the book, giving details of the sections which contain substantive information about each language, and also an indication of the major sources. No attempt has been made to indicate all publications on each language; almost all early ones are listed in Schmidt 1919. It is far from being an exhaustive list of Australian languages. Unpublished information communicated to me privately is indicated by p.c.

Typically, several neighbouring 'tribal languages' can be regarded as dialects of a single language, in the linguistic sense. There will be a name for each dialect but generally no conventional label of the whole language. For convenience, I have in most cases taken the name of one dialect as a label for the language.

Adnyamadhanha. 7, initial dropping – Hercus p.c.; 8.4, pronouns – Schebeck, Hercus and White 1973; also Schebeck 1974.

Alawa. 6.4.2, consonants; 8.4, cases; 9.3, 11.1.6, pronouns; 13.2, word order – Sharpe 1972.

Alyawarra. 1.1, 11.1.2, pronouns; 7.1.4, initial dropping – Yallop 1977.

Anēwan. See Nganyaywana.

Anguthimri (Aŋuṯimri). 1.1, 6.3, 6.4.6 (and notes), phonemes; 7.1.1–3 (and notes to 6.8.3), phonological changes – Crowley forthcoming-a. Ntraʔngith and Awngthim dialects: 7, 7.1.1, 6.8.4, 7.1.3, phonological changes – Hale 1964, 1976c.

Anindilyakwa. 4.2, baby talk – Leeding 1977, p.c.; 6.4.2, 6.6.2, consonants; 9.3, pronouns – Judith Stokes p.c.

Anmatjera. 7.2.2, final *ŋ* – Hale 1976b:416.

Arabana (including Wangganguru dialect). 6.4.2, 6.4.4, consonants; 6.8.3, 7, 7.1.1, 7.1.4, 8.4, phonological changes – Hercus 1972, 1979; 12.2.1, 12.2.6, verbs; 13.6.2, switch-reference marking – Hercus p.c.

Aranda. 3.2, songs – Strehlow 1971; 6.4.2, consonants – O'Grady, Voegelin and Voegelin 1966:59; 9.6, clitic; Notes to 10.3.2, cases; 12.2.1, verbs – Strehlow 1944.

Arandic subgroup (*and proto-Arandic*), consisting of Alyawarra, Andegerebina, Anmatjera, Aranda, Kaititj (q.v.): 7, 7.1.1–2, 7.1.4, 7.2.1, 8.1, 8.4, phonological changes; 12.2.6, verbs – Andrews, Breen, Hale, Koch p.c.; also Hale 1962.

Atampaya, dialect of Uradhi.

Awabakal. 11.3, singular bound pronouns; 12.2.2, verbs – Threlkeld 1834; H. Hale 1846:479–531 (the language called Kamilarai in error).

Awngthim. (Awŋṯim), dialect of Anguthimri.

Baagandji. 2.3, multi-dialect language – Hercus forthcoming, p.c. Kūrnū dialect: mystic language – Mathews 1902b:157–9.

Balyku. 10.4, dual suffix; 11.1.2, 11.2, pronouns – O'Grady, Voegelin and Voegelin 1966:84–90; 12.2.5, verb – O'Grady 1966. Banyjima dialect: 12.2.5, verb – O'Grady 1966.

Banjalang. 4.2, literacy project – Sharpe 1978; 6.4.2, 6.4.4, 6.4.6, 6.8.1, 6.8:2, phonemes and phonotactics; 8.4, 9.2.1, noun classes; 10.3, cases; 9.3, 11.1.4, 11.1.6, 11.2, 11.4, pronouns; 12.2.2, 12.2.5–6, verbs – Crowley 1978; Geytenbeek and Geytenbeek 1971; Cunningham 1969.

Banyjima, dialect of Balyku.

Baraba-Baraba, dialect of Wemba-Wemba.

Barbaram, see Mbabaram.

Bardi. 11.1.6, pronouns; 12.4, reflexive = reciprocal – Metcalfe 1975.

Bariman Gutinhma. 7.1.1, development of nasals – Sommer 1976a: 17.

Bidyara, dialect of Margany.

Biri. 8.4, pronominal enclitics – Beale mss.

Biyaygirri, dialect of Warrgamay.

Bunaba. 6.4.2, consonants – Rumsey p.c.

Bungandij. 8.5, vowel-final words – Smith 1880: 125–39; Curr 1886: III, 460–5; Mathews 1903a, 1903d etc. (see Schmidt 1919: 75–6).

Burarra. 4.3, language at Maningrida – Elwell 1977; 7.4, geminate stops – Glasgow and Glasgow 1967; 11.1.6, pronouns – Glasgow 1964.

Burduna, dialect of Dhalandji.

Cape York Creole. 4.1 – Crowley and Rigsby 1979; see also Dutton 1970.

Chaap Wuurong, see Jab Wurrung.

Creoles, see Cape York Creole, Roper Kriol; and Fraser 1977.

Daly River languages: a putative subgroup including Malak-Malak, Tyeraity, Maranunggu and about six other languages – Tryon 1974.

Darkinyung. 11.3, singular bound pronouns – Mathews 1903a: 271–4.

Dhalandji. 11.1.1–6, 11.2, pronouns; Notes to 6.5.1, 'to lie'. Burduna dialect: 7.3, 7.4, phonological change – Austin p.c.

Dharawal. Notes to 6.5.1, 'foot'; 8.4, final peripheral nasals – Eades 1976.

Dharuk. 11.3, bound pronouns; 12.2.2, 12.2.6, verbs – Dawes mss.; Mathews 1901a: 155–60. See Notes to 1.2 for early vocabularies of Sydney dialect.

Dhuduroa. 8.6 – Mathews 1909; Mathew 1899 (vocabulary from 'Barwidgee, Upper Murray'). The names Jaitmathang and Dhuduroa appear to refer to (tribes speaking dialects of) a single language; cf. Howitt 1904: 77–8.

Dhurga. 5.4.2, 'policeman'; 8.4, final peripheral nasals; 11.1.5–6, pronouns – Eades 1976.

Dhuwala/Dhuwal. 2.3, moiety-determined dialects – F. Morphy 1977; 6.6.2, initial apical contrast; 9.2.2, noun/adjective distinction; 9.4.4, adverbs; 10.2, cases; 11.2, Notes to 9.3, pronouns; 12.2.1–3, 12.2.5–7, 12.4, verbs – F. Morphy forthcoming and p.c. Djapu dialect: 5.4.1, tabooing of loan – F. Morphy p.c. Gupapuyŋu dialect: 7.4, stop contrast; 10.3, cases; 11.1.2, 11.4, pronouns – Lowe n.d, p.c. and F. Morphy p.c. See also under Yolŋu.

Diyari. Notes to 3.2, songs; Notes to 5.2.1, adjectives; 5.2.2, compounds; 5.4, loans; 6.4.4, rhotics; 7.4, voicing contrast; 7.5, nasal dissimilation; 9.4.4, Notes to 9.2.2, adjectives; 10.4, reduplication; 11.1.4, 11.2, 11.4, 9.3, Notes to 11.1.2, pronouns; 9.4.3, 12.2.1, 12.2.3, 12.3, verbs; Notes to 13.2, word order; 8.4, 13.6.2 switch-reference marking – Austin forthcoming, p.c.

Djapu, dialect of Dhuwala/Dhuwal.

Djaru. 5.4.2, 'policeman' – Elkin 1937:163; 7.5, nasal dissimilation; 12.2.2, verbs – Tsunoda 1978.

Djinaŋ. 8.1, 8.4–5, development of bound pronouns and reduction in use of ergative and accusative inflections – Heath 1979; Bruce Waters, Michael Christie and Vanessa Elwell p.c.; 4.3, language at Maningrida – Elwell 1977. See also under Yolŋu.

Djingili. 6.4.2, dorsal contrast; Notes to 6.7, vowel harmony; 11.1.6, pronouns – Chadwick 1975, p.c.; 8.1, 12.2.7, relationship to other Australian languages unclear.

Dyangadi. 7, cognates with Nganyaywana – Crowley 1976.

Dyirbal, used for illustration throughout the book; full description is in Dixon 1972, 1971, 1977c, d, forthcoming-f. Substantial mentions are: 1.4, number; 2.1, 'name'; 2.3, dialect differences; Notes to 2.1, names; 3.3, 5.3.4, 5.4.2, avoidance styles; 4.2, code-switching; 5, vocabulary; 6.4.2, consonants; 6.6.2, final *r*; 6.8.2, loans; 6.8.3, phonological changes; 9.2.1, 5.3, 11.2, noun classes; 9.5.2, time qualifiers; 9.6 (and notes), clitics; 10.2 (and notes), 9.7, case marking; 10.3.3 (and notes), giving constructions; 10.4, nominal derivational suffixes; 11.1.2–5, 11.2, 11.4 (and notes), pronouns; 9.4.3, 12.2.1–6, verbs; 12.1, 12.4, verbal derivational affixes; 13, syntax. Girramay dialect: 2.3, 4.2, relation to other dialects; 2.4, tribal name; 3.1, myths; 3.2, song; 11.1.2, 11.2, pronouns. (Gambilbarra and Jabunbarra) Jirrbal dialects: 2.3, 2.4, 4.2; 3.3, avoidance style. (Dulgubarra) Mamu dialect: 2.3, 2.4; 3.1, myth; 3.3, avoidance style; 5.2.1, kinship terminology. Waribarra Mamu dialect: 2.3, 2.4. Ngajan dialect: 2.2, 2.3, 2.5, 4.2; 7.3, evolution of vowel length.

Eastern Torres Straits language (Miriam) – Ray 1907. 8.3, related to Papuan languages – Wurm 1975:328; Notes to 8.3, velar nasal – Rigsby p.c.

Gabi. 4.2, song – my unpublished fieldwork; 5.2.3, compounds – Elkin 1937:161 (based on Mathew 1910); 11.1.3–4 (and notes), 11.2, pronouns – Mathew 1910.

Gadang – Holmer 1966, 1967; 8.4, similarities with Awabakal.

Gamilaraay (Kamilaroi). 3.4 secret language – Mathews 1902b: 159–60, 1903a:269–70; 6.4.2, consonants – Austin p.c.; 8.5, subgrouping – Austin, Williams and Wurm forthcoming. Yuwaalarraay dialect: 5.2, 5.4, ten lexemes; 5.2, 7.3, evolution of vowel length – Williams 1976; Austin, Williams and Wurm forthcoming. Yuwaaliyaay dialect: 12.2.2, 12.2.6, verbs – Williams 1976.

Garadyari (Karadjeri). 5.4, 'policeman' – Elkin 1937:163; 11.1.4, pronouns; 12.2.1–2, 11.1.4, verbs – McKelson n.d.

Garawa. 6.4.2, dorsal contrast; 11.2, Notes to 11.1.2, pronouns – Furby 1972, 1974.

Gariyarra (Kariera), dialect of Ngarluma.

Girramay, dialect of Dyirbal.

Gog-Nar. 11.4, interrogative pronoun – Breen 1976b.

Gugada, dialect of Western Dialect.

Gugu-Badhun, dialect of Warungu.

Gugu-Yalanji. 5.3, vocabulary – H. and R. Hershberger p.c.; 6.4.2, consonants – Oates and Oates 1964; 6.7, vowel harmony – H. Hershberger 1964; 8.4, phonotactics – H. and R. Hershberger p.c.; 11.1.2, 11.2, 11.4, pronouns – R. Hershberger 1964b and p.c.; 8.5, 12.2.1–2, Notes to 13.3.2, verbs – R. Hershberger 1964a and p.c. Nyungal dialect: 11.4, 'who' – R. and H. Hershberger p.c. Wakoora dialect: 5.1, ten lexemes; 5.2.2, vocabulary – Curr 1886:II, 402–7; Richards 1926.

Wagaman dialect: 6.7, vowel harmony – my unpublished field-work.

Gumbaynggir. 6.4.2, 6.8.2–3, consonants and phonotactics; 7, cognate with Nganyaywana; 10.2.3, Notes to 9.1, cases; 10.4 comitative; 11.1.2–5 (and notes), Notes to 9.7, 11.2, 11.4, pronouns; 12.2.2, 12.2.6–7, verbs; 12.4, reflexive pronouns; 13.2, word order – Eades 1979.

Gunbalang. 4.3, language at Maningrida – Elwell 1977. See also J. K. Harris 1969.

Gundungura. 11.3, pronouns – Mathews and Everitt 1900; Mathews 1901a, b, 1904a.

Gunggari, dialect of Margany.

Gunggay, dialect of Yidiny.

Gungoragone. 4.3, language at Maningrida – Elwell 1977.

Gunibidji. 9.3, Notes to 11.1.6, pronoun system – McKay, forthcoming; 4.3, language at Maningrida – Elwell 1977; Notes to 6.5.2, phonological change – McKay mss.-a.

Gunwinygu. 11.1.6, pronouns; 12.2.7, 8.1, verbs – Oates 1964; Notes to 3.3, avoidance style – J. K. Harris 1970; 4.3, language at Maningrida – Elwell 1977.

Gunwinygu subgroup, including Gunwinygu, Rembarrnga, Gunbalang, Dalabon: 11.1.6, 11.3, pronouns.

Gunya, dialect of Margany.

Gupapuyŋu, dialect of Dhuwala/Dhuwal.

Gureng-Gureng. 12.2.2, verbs – Brasch 1975.

Gurindji. 12.2.2–6, 9.4.3, verbs – McConvell p.c.

Gurrama, dialect of Yinyjibarnrdi.

Guugu Yimidhirr. 1.3 (and see notes), 'kangaroo' – Roth 1898; Haviland 1974; 2.4, name – Haviland 1979a; 3.3, avoidance style – Haviland 1979b, forthcoming; 3.4, dramatic speech style; 5.2.3, vocabulary; 6.4.1–5, 6.5.1, laminals; 6.6.1–2 (and notes), phonotactics; 8.4, vowel length; Notes to 10.2, reduplication; 10.4, nominal derivational suffixes; 11.2, pronoun; 12.2.1–6 (and notes), 9.4.3, Notes to 8.5, verbs; 13.3.2, verbal suffix -*Vdhi* – Haviland 1979a, p.c.; Roth 1903.

Guwamu, dialect of Margany.

Jab Wurrung (Chaap Wuurong), dialect of Wemba-Wemba.

Jabugay. 7.3, 8.4, evolution of vowel length; 8.4, final peripheral nasals; 9.3, 11.1.4–6, pronouns; 12.1, 12.2.1–2, 12.2.6, verbs; 6.8.3, 11.1.4, 12.2.1, phonological changes; 6.5.3, 6.7, Notes to 11.4, vocabulary; 4.2, macro-tribe – Patz 1978; Hale 1976e; my own fieldwork.

Jaitmathang, see Dhuduroa.

Jaja Wurrung, dialect of Wemba-Wemba.

Jirrbal, dialect of Dyirbal.

Kaititj. 6.3, vowels; 6.4.2, 6.4.6 (and notes), consonants; 7.1.4, initial dropping – Koch, Hale p.c.

Kala Lagau Langgus, see Western Torres Straits language.

Kalkatungu. 5.4 'policeman'; 6.4.2, 6.8.3, consonants; 7, initial dropping; 7.5, nasal dissimilation; 10.2–3, cases; 10.4, nominal derivation; 11.1.4, 11.2 (and notes), 11.4, pronouns; 12.2.5–6, verbs; 13.4.1, 13.6.1 (and notes), syntactic derivation – Blake 1979b, p.c.

Kamilaroi, see Gamilaraay.

Kirræ Wuurong, possibly dialect of Kuurn Kopan Noot.

Kitja. 6.4.3, 6.6.2, consonants – P. and J. Taylor 1971.

Koko-Bera. 5.2.4, semantic structure; Notes to 6.2, contrastive stress – Paul Black p.c.

Kolijon or Kolakngat. 8.5–6, scanty data available – Robinson mss. notes (in Mitchell Library, Sydney); Tuckfield 1842 (repr 1844); Smyth 1878: II, 89; Cary 1898; Lloyd 1862.

Kukatj. 7.2, final dropping; Notes to 9.2.1, cases – Paul Black p.c.

Kuku-Thaypan. 7, Notes to 7.1.1, initial dropping – Rigsby 1976.

Kungkari. 11.1.4–5, pronouns – Breen p.c.

Kūrnū, dialect of Baagandji.

Kurtjar. Notes to 2.1, names, taboo; 4.1, 'love to'; 6.4.4, rhotics; 7, initial dropping; Notes to 9.2.1, Notes to 10.3.1, cases; 12.1, 12.2.5, Notes to 12.2.2, verbs – Black forthcoming, p.c.

Kuuku-Yaʔu, dialect of Umpila.

Kuurn Kopan Noot (and Peek Whurrong dialect). 2.4, name; 11.4, interrogatives – Dawson 1881; Wilkinson 1978.

Lama-Lama. 7.1.1, nasal development – Sommer 1976a: 17; see also Laycock 1969.

Lardil. 3.4, 5.2.4, 7.6, Damin secret language – Hale 1973a: 442–6, p.c.; Catford 1977: 65; 8.4, 9.3, kin-determined pronouns – Hale 1966b; 13.4.2, accusative morphology – McConvell mss.; Klokeid 1976, 1978.

Linngithigh. (Linŋit̪iɣ). Notes to 3.3, avoidance vocabulary; 7.1.1–2, 7.5, initial-dropping changes; 8.3, pronoun – Hale 1966a, 1964, 1976c.

Luritja, dialect of Western Desert.

Madhi-Madhi, dialect of Wemba-Wemba.

Malak-Malak. 8.1, lexemes – Tryon 1974: 267–8, 278; 11.1.6, pronouns; 12.2.7, verbs – Birk 1976.

Malyangapa. 6.4.4, rhotics; 11.4, interrogatives – Austin mss.; Hercus p.c.

Mamu, dialect of Dyirbal.

Mangala. 11.3, pronominal clitics; 12.2.1–2, 12.2.5, verbs – McKelson 1974.

Mangarayi. 12.2.7, verbs; Notes to 13.3.2, derivational suffixes – Merlan mss.

Mantjiltjara, dialect of Western Desert.

Mara. 8.4, ablative – Heath 1978a; 11.4, interrogative – Heath, p.c.

Maranunggu. 8.1, lexemes; 12.2.7, verbs – Tryon 1970, 1974.

Margany (and Gunya dialect). 5.3, 'brother'; 8.4, voicing contrast, bound pronominal isogloss; 11.4, interrogatives – Breen forthcoming, p.c. Bidyara dialect: 5.3, 'father'; 11.1.2, pronoun – Breen 1973. Gunggari dialect: Notes to 11.2, pronouns – Breen p.c. Guwamu dialect: 11.3, bound pronouns – Austin and Wurm p.c.

Maric subgroup, including Biri, Guwa, Margany, Warungu: 8.4, areal features.

Maung. 6.4.2, consonants; 9.3, 11.1.6, 11.4, pronouns; 12.2.7, verbs – Capell and Hinch 1970; 4.3, language at Maningrida – Elwell 1977.

Mbabaram (Barbaram). 2.4, name; 6.4.2, consonants; 6.4.2, 7, 7.1.2–4, Notes to 8.4, phonological changes; 12.2.5, verbs – Dixon forthcoming-e.

Mbara. 7, initial dropping – Sutton 1976b.

Mbiywom. 7, 7.1.1–3, initial-dropping changes – Hale 1964, 1976c.

Middle Paman. 11.4, reconstruction of interrogative forms – Hale 1976d.

Mpalitjanh (Mpalit^{y}an̪). 7, 7.1.3, initial-dropping changes – Hale 1964, 1976c.

Mudbura. 12.2.2, verb – McConvell p.c.

Muk-Thang (Kurnai, Ganai). 7.2, initial clusters, final ŋ – Smyth 1878:II, 24–39, 48–9, 91–3, 97–8; Taplin 1879a; Curr 1886:III, 539–57, 560–1; Mathew 1899; Mathews 1902a; Hercus 1969; Tindale p.c. etc.

Murinypata. 6.4.4, rhotics; Notes to 8.1, phonotactics; Notes to 9, use of ergative; 9.3, 11.1.6, pronouns – Walsh 1976a,b.

Nakara. 4.3, language at Maningrida – Elwell 1977.

Ngaanyatjara, dialect of Western Desert.

Ngajan, dialect of Dyirbal.

Ngaliwuru. 11.1.6, pronouns – Bolt, Hoddinott and Kofod n.d.

Ngamini. Notes to 11.1.2, pronouns – Austin p.c.

Ngandi. 8.4, inchoative; Notes to 9.3, 'who' = 'what'; 5.4.3, verbs; Notes to 9.1, kin terms; 12.2.7, verbs – Heath 1978a, 1978c.

Nganyaywana (Anēwan). 7, 7.1.2, 7.1.4, 8.1, 6.4.3, phonological changes – Crowley 1976.

Ngarla. 11.1.2, 11.1.6, pronouns; 12.2.5, verb – O'Grady, Voegelin and Voegelin 1966:80–2; O'Grady 1966.

Ngarluma. 5.1, 'straight'; 6.5, lexemes; 10.2, cases; 11.1.2, 11.1.4–5, 11.2, 11.4, pronouns; 12.2.4, verb; 13.4.2 (and notes), accusative morphology – O'Grady, Voegelin and Voegelin 1966:96–102; O'Grady 1966; Klokeid 1978. Gariyarra (Kariera) dialect: 2.1, kin and section names – Radcliffe-Brown 1913:147–9; Wordick p.c.; 12.2.2, 12.2.5, verbs – O'Grady 1966.

Ngarndji. 6.4.2, dorsal contrast – Chadwick p.c.

Ngawun. Notes to 10.3.2, cases – Breen mss.

Ngayarda subgroup, consisting of Balyku-Banyjima, Ngarla, Ngarluma-Gariyarra, Nhuwala, Nyamal, Yinyjibarnrdi-Gurrama and Mardadhunira: 6.5.3, 6.8.3, phonological changes; 11.4, pronouns; 12.1, 12.2.1–2, 12.2.5–6 – O'Grady 1966.

Ngiyambaa. 5.4, loans; 6.6.1, monosyllables; 7.5, nasal dissimilation; 8.5 subgrouping; 9.4.3, clitic; 10.4, nominal derivational suffixes; 11.1.5–6, 11.2–4 (and notes), pronouns; 12.1, 12.2.2, 12.2.6, verbs; Notes to 13.2, word order – Donaldson 1980, p.c.

Nhanda. 7, initial dropping; 11.1.3, genitive – O'Grady, Voegelin and Voegelin 1966:119–28.

Nhuwala. 12.2.2, verb – O'Grady 1966.

North Kimberley subgroup, consisting of Ungarinyin, Worora, Wunambal; 12.2.2, 12.2.7, verbs – Capell and Coate forthcoming.

Northern Paman subgroup, including Anguthimri, Linngithigh, Mbiywom, Mpalitjanh, Uradhi, Yinwum: 7, initial dropping; 11.4, pronoun – Hale 1964, 1976c.

Ntraʔngith, (Ntʳaˀŋit̪), dialect of Anguthimri.

Nunggubuyu. 8.4, inchoative – Heath 1978a; 9.3, pronouns – Hughes 1971.

Nyamal. 11.1.2, 11.2–4, pronouns; 12.2.2, verb – O'Grady, Voegelin and Voegelin 1966:82–4; O'Grady 1966; Notes to 13.4.1, syntax – Klokeid 1978.

Nyanganyatjara, *Nyangatjatjara*, dialects of Western Desert.

Nyangumarda. 5.3, 'mother' – O'Grady 1959; 5.4.2, loans – O'Grady 1960b; Notes to 6.7, vowel harmony; 12.2.1–4, verbs – O'Grady 1964, 1970; Hoard and O'Grady 1976.

Nyawaygi. 5, vocabulary; 1.1, 6.4.6, consonants and phonological change; 8.4, cognates with Warrgamay; 10.2, 10.3.3 (and notes), cases; 10.4, nominal derivational suffixes; 11.1.2, 11.1.4, 11.4, pronouns; 12.1, 12.2.1–7 (and notes), 8.2, 8.5, verbs – Dixon forthcoming-c.

Nyigina. 8.4, bound pronouns and ergative case; 11.1.6, pronoun system – B. Stokes p.c. Yawuru (Yauor) dialect: 5.4 'policeman' – Elkin 1937:163.

Nyungal, dialect of Gugu-Yalanji.

Nyungar. 4.1.2, language in contact situation – Douglas 1976.

Olgolo. 7.1.1, initial dropping – Dixon 1970b; Sommer 1969.

Oykangand (Kunjen). Notes to 3.3, avoidance style; 7.2, Notes to 7.4, phonological changes – Sommer 1969; Black p.c.; Notes to 13.2, syntax – Sommer 1972:30.

Pallanganmiddang. 6.4.7 (and notes), interpreting written records, q.v.

Peek Whurrong, dialect of Kuurn Kopan Noot.

Pintupi, dialect of Western Desert.

Pitjantjatjara/Pitjantjara, dialect of Western Desert.

Pitta-Pitta. 2.2, section and moiety names; 6.4.2–6, consonants; 6.5.3, 'forehead'; 6.6.1, phonotactics; 7.2.1, form of morphemes; 9.6, clitic; 10.2–3, 13.4.2, cases; 11.4, interrogatives; 12.2.1, 12.2.6, verbs; 10.2, 13.4.1 tense-determined construction – Blake 1979a; Roth 1897.

Rembarrnga. Notes to 6.4.6, glottal stop; 7.4, stop contrast; 9.3, 11.1.6, 11.3, pronouns; 12.1, 12.2.7, 12.4, 1.1, 8.1, verbs; 12.5, nominal incorporation; 13.3.1, syntactic derivations – McKay 1975, mss.-b, p.c.; 4.3, language at Maningrida – Elwell 1977.

Ritharŋu. 8.4, 8.5, pronominal enclitics, comitative; 11.4, interrogative – Heath 1978a, 1979, p.c. See also under Yolŋu.

Roper Kriol. 4.1 – Sharpe and Sandefur 1976, 1977; Sharpe 1974; Zorc p.c.

Tanganekald, speak a dialect of Yaralde.

Tasmanian. 8.2 – Plomley 1976; Crowley and Dixon forthcoming.

Thargari. 6.6.2, phonotactics; 9.6, clitics; 10.2, 13.4.2, cases; 11.1.2, 11.2, 11.4, pronouns; 12.2.2–3, 12.2.6, 12.4, verbs – Klokeid 1969; Austin p.c.

Tiwi. 2.1, 5.4.1, taboo – Hart 1930; Notes to 6.3, stress; 9.3, 11.1.6, 11.4, pronouns; 12.5, nominal incorporation; 13.2, word order – Osborne 1974; 11.3, language change – Lee p.c.; 8.1 (and notes), 12.2.7, relationship to other Australian languages unclear.

Tyeraity. 8.1, lexemes – Tryon 1974.

Umbuygamu. 6.4.3, laterals; Notes to 7.4, stop–fricative inventory – Sommer 1976a.

Umpila. 3.3, avoidance style – Thomson 1935; 7.1.1, phonological changes – O'Grady 1976; 11.1.6, 11.2 (and notes), pronouns – O'Grady p.c. Kuuku-Yaʔu dialect: 6.4.4, rhotics – Thompson 1976a; 13.2, ergative omittable – Thompson 1976b.

Ungarinyin. 9.3, pronouns; 12.2.7, verbs – Coate and Oates 1970; Rumsey 1978, p.c.

Uradhi (Uraði). 7, 7.1.1, 6.8.3, phonological changes; 7.2.2, final phonetic velar – Hale 1964, 1976b,c; 11.1.6, pronouns – Crowley forthcoming-b. Atampaya dialect: Notes to 3.3, avoidance vocabulary – Crowley forthcoming-b. Yadhaykenu dialect: 5.4.2, loan concepts – Crowley forthcoming-b.

Waga. 11.1.3, accusative; 11.1.4, 11.2, pronouns – Wurm 1976, p.c.; Mathew 1910.

Wagaman, dialect of Gugu-Yalanji.
Wakoora, dialect of Gugu-Yalanji.
Walmatjari. 5.1, 'straight'; 5.3, copula; 5.4, loans; 6.4.2, consonants; 11.3, 8.5, bound pronouns; 12.1, 12.2.1–6, verbs; Notes to 6.5.2 – Hudson and Richards 1976; Hudson 1968, p.c.; 13.6.1, syntactic pivot – Hudson 1976; Dixon 1979.
Wambaya. 6.4.2, phonological change – Chadwick p.c.
Wangaaybuwan, name of a tribe speaking a dialect of Ngiyambaa.
Wangganguru, dialect of Arabana.
Wangkumara. 10.3.1, cases; Notes to 11.1.4, pronouns – Breen 1976a, p.c.
Wari(barra) (*Mamu*), dialect of Dyirbal.
Warlmanpa. 4.3, speaking Warlpiri; Notes to 9.4.3, interrogative – Nash p.c.
Warlpiri. 3.1, dreamtime – Meggitt 1972:71; 3.1, song cycle – Meggitt, 1966; 3.3, avoidance style; 4.3, speakers at Yuendumu; 5, synonymy – Hale p.c.; 5.2.1, numbers – Hale 1975, spatial terms – Laughren 1978; 6.2, stress; 6.4.2, 6.4.4 (and notes), consonants – Hale 1973b, 1974; Notes to 6.7, vowel harmony; 7.2.1, final *-pa*; 7.3, vowel length – Hale 1973a; Notes to 9.2.2, two colour terms – Hale p.c.; 10, 10.2–3, 5, Notes to 6.5.2–3, cases – Hale 1974, p.c.; Kesteven, Laughren and Baarder p.c.; 10.4, nominal derivational suffixes – Hale 1974, p.c.; 11.1.1–6, 11.3–4, 13.4.2, pronouns – Hale 1973b, 1974; Laughren 1977, p.c.; 12.1, 12.2.1–6, 9.4.3, 5, verbs – Hale n.d.-a, 1974; 13.3.3, construction type – Hale 1973b: 336; 13.5, 13.6.1, subordinate clauses – Hale 1976a.
Warluwarra. 6.4.2, 6.5.1, consonants; 7.4, vowel length and voicing; 10.2–3, 6.5.1, cases; 11.1.2, 11.2–4, pronouns; 12.2.1, verbs – Breen 1971, p.c.
Warndarang. 8.4, ablative; 11.4, interrogative – Heath 1978a, p.c.
Warnman. 11.3, pronouns – O'Grady, Voegelin and Voegelin 1966: 136–8.
Warrgamay (including Biyaygirri dialect). 1.3, Lumholtz's misconceptions; 2.2, section names; 2.4, dialect name; 5, 6.4.6, vocabulary; Notes to 6.2, stress; 6.4.2–6, phonemes; 6.6.1–2, phonotactics; Notes to 6.7, loans; 8.4, 7.3, vowel length; 8.5, cognates with Nyawaygi; 9, sentential example; 10, 10.2, 9.7, cases; 10.4, nominal derivational suffixes; 11.1.1–6, 11.2, 11.4 (and notes), 9.7, pronouns; 12.1, 12.2.1, 12.2.5–6, verbs; 10, 12.4, verbal derivations; 13.5, apprehensional affix; 13.6.1, syntactic pivot – Dixon forthcoming-b; 13.4.2, 12.4, morphological/syntactic change – Dixon forthcoming-a,b.
Warumungu. 6.7 (and notes), vowel harmony – Hale 1973a: 408–13; 12.2.2 (and notes), verbs – Hale n.d.-b.
Warungu. 5.3, vocabulary; 8.4, laminal and length loss; 11.1.2, 11.1.4, 11.2, pronouns; 12.2.5, verb – Tsunoda 1974; my fieldwork. Gugu-Badhun dialect: 8.4, laminal contrast – Sutton 1973.
Wemba-Wemba (including Wergaia, Baraba-Baraba dialects). 2.4, dialect names; 10.3, cases; Notes to 9.3, 11.4, pronouns; 12.2.2, 12.2.6, verbs – Hercus 1969. Madhi-Madhi dialect: 6.4.2, Notes to 6.4.4, consonants – Hercus 1969. Jab Wurrung dialect: 2.3–4, 8.6 – Dawson 1881. Jaja Wurrung – Smyth 1878: II, 154–65, etc.
Western Desert. The many dialects of this language show considerable lexical but relatively little grammatical variation – information is from Douglas 1964, p.c. (Ngaanyatjara and other dialects); Glass and Hackett 1970, p.c. (Ngaanyatjara);

Trudinger 1943; Anon n.d. (Pitjantjatjara); Hansen and Hansen 1969, 1974 (Pintupi); Marsh 1969, 1976 (Mantjiltjara); O'Grady, Voegelin and Voegelin 1966: 138–161 (Yulbarija); Platt 1972, p.c. (Gugada); Hale p.c. 2.1, tabooed pronoun (Douglas 1964:3); 2.2, difficulty of recognising tribes (R. M. Berndt 1959); 2.4, dialect names (Douglas 1964:2–4; Gould 1969:63); 5, vocabulary; 6.4.1–5, phonemes; 6.6.1, phonotactics; 9.6 (and notes), clitics; 10.2, 9, cases; 10.4, reduplication; 11.1.1–5, 11.2–4 (and notes) pronouns; 12.1, 12.2.1–6, 12.4, verbs; 13.6.2, 8.4, switch-reference marking. Gugada dialect: Notes to 3.3, avoidance vocabulary (Elkin 1940: 345–9); 6.5, lexemes; 10.2, cases. Luritja dialect: 3.2, songs (Strehlow 1971: 199); avoidance pronouns (Hale p.c.); 3.3, avoidance style pronouns (Hale p.c.); 7.2.1, final *-pa* (Hale 1973a: 449ff). Mantjiltjara dialect: Notes to 12.2.5, verbs (Marsh 1976). Ngaanyatjara dialect: 5.1, 5.3, 6.4.1, vocabulary; 11.1.1, 11.1.5, 11.2, pronouns; 12.2.1, verbs. Nyanganyatjara dialect: 11.1.1, pronouns. Nyangatjatjara dialect: 11.1.5, pronouns.

vocabulary; 5.2.1, *kunta* (Myers 1976: 141–51; see also Morice 1978); 6.6.1, phonotactics; 12.2.1, 12.2.5, verbs. Pitjantjatjara (Pitjantjara) dialect: 6.5.2, 6.6.2, phonotactics; 7.2.1, final *-pa* (Hale 1973a: 449ff); 11.1.1, 11.1.5, pronouns. Yulbarija dialect 11.1.5, pronouns.

Western Torres Straits language (also known as Mabuiag, Yagar-Yagar, Kala Lagau (or Lagaw) Langgus). 3.4, teenager secret language – Laade 1970; Notes to 6.4.4, rhotic; 8.3–4, 7.1.4, general comments; 9.3, gender; 13.5, subordinate clauses – Bani and Klokeid 1972; Ray 1907; 13.4.2, syntactic derivation – Bani and Klokeid 1976.

Wik-Meˀnh. 3.3, avoidance style – Hale p.c.; 7.2.2, final *ŋ* – Hale 1976b.

Wik-Muminh. 7.4, voice contrast – Hale 1976d.

Wik-Munkan. Notes to 3.3, avoidance style – Thomson 1935; 3.1, clitic; 4.3, lingua franca; 6.4.2, consonants; Notes to 10.3.2, cases – Kilham 1977, p.c.; Sayers 1974; 5.2.3, compounds – Kilham 1974.

Wiradhuri. 2.4, 10.4, name; 8.5, subgrouping – Austin, Williams and Wurm forthcoming; H. Hale 1846, etc.

Worora. 9.3, pronouns – Love 1938.

Yabula-Yabula. 2.4, name; 8.4, no bound pronouns – Curr 1886: III, 581–2, 588–9; Mathews 1903c.

Yadhaykenu, dialect of Uradhi.

Yalarnnga. 10.2, locative – Blake 1979b.

Yandruwanhtha. Notes to 11.1.1, pronouns – Austin p.c.

Yanyuwa. 1.1, 6.4.2, 6.5.1, 6.6.2, consonants – Kirton and Charlie 1979, p.c.; Huttar and Ladefoged p.c.; 8.4, 9.3, 11.1.2, pronouns; 10.2, cases – Kirton 1970, 1971, p.c.

Yaralde. 2.5, 8.5, similarities to Yitha-Yitha; 7.2, initial clusters; 11.4, bound pronouns – McDonald 1977; Meyer 1843; Taplin 1880. Tanganekald dialect: 3.2, song – Tindale 1941: 234.

Yauor (Yawuru), dialect of Nyigina.

Yaygir. 1.4, territory; 6.4.4, 6.6.3, 6.8, 6.8.3, consonants; 7, 7.1.4, initial dropping – Crowley 1979, 1976.

Yidiny, used for illustration throughout the book; full description is in Dixon 1977a, d, forthcoming-d. Substantial mentions are: 2.1, moieties, totems, names; 2.2, marriage; 2.3–5, language, local groups; 3.3, avoidance vocabulary; 4.2, present situation; 5, vocabulary; Notes to 6.2, stress; 6.4.2, 6.4.4, consonants; 6.8.3, dissimilation; 7.3, evolution of vowel length; 8.4, final peripheral nasals; 10.1–3, 9.5.1, 9.7, cases; 10.4, nominal derivational affixes; 11.1.4–6 (and notes), 11.4, 9.7, Notes to 9.3, pronouns; 12.1, 12.2, 12.2.1–7, 12.4, 9.4.2, verbs; 13, syntax. Gunggay dialect: 8.4, final peripherals.

Yinggarda. 6.5, lexemes; 11.2, pronoun; 12.4, noun and verb suffixes – O'Grady, Voegelin and Voegelin 1966: 114–18.

Yinwum. 7.1.1–3, 8.1, phonological changes – Hale 1964, 1976c.

Yinyjibarnrdi. 6.4.2, consonants; Notes to 6.4.4, *y* sounds; 6.5.3, 6.8.3, phonological changes; 11.4, interrogatives; 12.2.5, verb; 13.4.2 (and notes), accusative morphology. Gurrama dialect: 12.2.5, verb – O'Grady, Voegelin and Voegelin 1966: 90–6; O'Grady 1966; Wordick p.c.

Yir-Yoront (and dialect Yir Thangedl). 3.2, song words – Alpher 1976a; 5.2.2–3, compounds; 6.4, 6.8.1, Notes to 6.5.2, 7.1.1, phonology – Alpher 1973, 1972, p.c.

Yitha-Yitha. 2.4, name; 2.5, similarities to Yaralde – Curr 1886: II, 285–9; Hercus 1969; Mathews mss. notes, etc.

Yiwaja. 13.2, word order – Capell 1962a.

Yolŋu: a subgroup of about six languages, including Dhuwala/Dhuwal, Djinaŋ and Ritharŋu, spoken in Eastern Arnhem Land – Schebeck n.d.; Zorc 1979. 2.1, 6.5, moieties, tabooing – F. Morphy p.c.; 3.1, story, song cycles – R. M. Berndt 1952; Warner 1937; 3.2, songs – R. M. Berndt 1952: 67: I. Keen 1977, p.c.; F. Morphy p.c.; 4.2, speaking English – F. Morphy p.c.; 5.2.2, *l̲ikan* – H. Morphy 1977: 87–91; 5.2.4, taxonomic terms – Rudder 1977, 1979; 5.3, 'alive' – F. Morphy p.c.; 6.4.1, 6.4.3, phonetics, phonology – F. Morphy p.c.; Lowe n.d.; 8.1, 8.4–5, development of bound pronominals – Heath 1979; 11.1.5, pronoun usage; 12.4, verbal derivational affix – F. Morphy p.c.

Yota-Yota. 2.4, name; 8.4, no bound pronominals; 11.4, interrogatives – Curr 1886: III, 566–87, Mathews 1902b; Hercus 1969; etc.

Yukulta. 6.4.3, 6.6.2, consonants; 9.3, interrogatives, indefinites; 10.4, nominal derivational affix; 13.4.1–2, construction-types – S. Keen 1972.

Yulbarija, dialect of Western Dialect.

Yuwaalarraay, *Yuwaaliyaay*, dialects of Gamilaraay.

GLOSSARY

Definitions and explanations given below refer to the way in which these technical terms are used in this book, within the context of a discussion of Australian linguistics. Complementary terms are cross-referenced by Compl.

ABLATIVE, case inflection indicating motion away from the referent of the noun or pronoun to which it is added – pp 295–7.

ABSOLUTIVE, case inflection marking intransitive subject (S) and transitive object (O) functions – pp 267, 286ff, 294 Compl. ergative.

ACCUSATIVE, case inflection marking transitive object (O) function – pp 286ff. Compl. nominative.

AFFIX, a bound form added to a root or stem. Types: prefix, suffix; inflectional, derivational.

AGGLUTINATIVE, a type of language whose words are readily segmentable into a sequence of morphemes (each of which typically conveys one piece of information) e.g. Turkish, most Australian languages.

ALIENABLE possession, where the possessed does not have any inherent connection with the possessor, and can be given away e.g. *my pipe*, *your spear*, *his dog*. Compl. inalienable.

ALLATIVE, case inflection indicating motion towards the referent of the noun or pronoun to which it is added – pp 295–7.

ALLOMORPH, one of several alternative forms of a single morpheme e.g. regular past tense inflection in English has allomorph *-əd* after a stem ending in *t* or *d*, allomorph *-t* after a stem ending in a voiceless sound other than *-t*, and allomorph *-d* elsewhere (examples are /bæt + əd/ *batted*, /sæk + t/ *sacked* and /wæg + d/ *wagged*).

ALLOPHONE, one possible pronunciation of a phoneme e.g. in English the phoneme /p/ generally has aspirated allophone [p^h] at the beginning of a stressed syllable, unreleased allophone [p˺] word-finally, and unaspirated allophone [p$^=$] in other positions. See pp 125–7.

ANTIPASSIVE, a syntactic derivation (= transformation) which puts the underlying transitive subject (A) noun phrase into derived intransitive subject function (S), puts the underlying transitive object (O) NP into an oblique case (generally, instrumental, locative or dative), and marks the verb with an 'antipassive' derivational affix. See pp 445–7.

ASSIMILATION, the process by which one sound changes to become more similar to a neighbouring sound e.g. *-nb-* becoming any of *-mb-*, *-db-*, *-nd-* or *-nm-*. Compl. dissimilation.

AVERSIVE, case inflection indicating that the referent of the noun or pronoun to which it is added should be avoided, since it is potentially harmful – pp 292–3, 299–300.

BOUND FORM, a form which cannot occur alone, but must be attached to some other form e.g. *un-*, *-s*, *-ness* in English. Compl. free form.

CASE, a system of nominal inflections; in many languages each noun phrase must bear a case inflection marking its function in the sentence in which it appears. See absolutive, ergative; nominative, accusative; dative, purposive, causal; instrumental, aversive; locative, allative, ablative.

CAUSAL, case inflection indicating that the referent of the noun or pronoun to which it is added is responsible for the state or event described by the core constituents of the clause – pp 297–9.

CLITIC, a bound form that can be added to a word from any of several (or all) parts of speech; it occurs on the periphery of the word, further from the root than inflectional affix(es). A clitic that is added to the beginning of a word is called a proclitic; one added to the end of a word is an enclitic. See pp 284–5, 362ff.

COGNATES, two words in different languages which are historically related i.e. descend from a single form in a common ancestor (proto-)language.

COMITATIVE, a derivational suffix to nouns and adjectives forming an adjectival stem 'with a —', or 'having a —' – pp 324–5.

COMPARATIVE METHOD, the explicit comparison of sound and meaning correspondences between forms in related languages, and study of the distribution of such correspondences, as a help in putting forward hypotheses about aspects of the structure of the proto-language.

COMPLEMENTARY DISTRIBUTION, the occurrence of each of two or more items (sounds or forms) in mutually exclusive environments e.g. in English, allophones (q.v.) [p^{h}], [p$^{=}$] and [p˺] are in complementary distribution (and can thus be regarded as members of a single phoneme /p/).

CONJUGATION, class of verbs all of which take the same inflectional allomorphs – pp 279–80, 382ff.

CONSTITUENT, a word or group of words that has a functional role in a construction; e.g. *those old men are laughing in the garden* has three immediate constituents, *those old men* which functions as subject of the sentence, *are laughing* which is the verbal constituent, and *in the garden* which supplies locational qualification. Those constituents which must be stated or understood for the sentence to be grammatically complete are called core constituents; peripheral constituents of various types can optionally be added to the core, as *in the garden* is here added to the two core elements *those old men* and *are laughing* – pp 266–8.

DATIVE, case inflection marking functions such as indirect object, benefactive – pp 297–9.

DERIVATIONAL AFFIX, when added to a root (or stem), forms a stem. Some derivational affixes change the grammatical function of the root/stem to which they are attached e.g. *beauty* (noun) + *-ful*→*beautiful* (adjective); others do not e.g. *true* (adjective) + *un-*→*untrue* (adjective). See pp 266–70, 322–5, 431–6, 443ff.

DIACHRONIC CHANGE, historical change between two related forms (or sets of forms) at different historical stages of the same language.

DIACHRONIC DESCRIPTION, full account of the changes whereby a language system at one date evolved into another at a later date (e.g. from Old English to Modern English). Compl. synchronic description.

DIALECT, a regional variety of a language, spoken by people who habitually reside within a certain region.

DISSIMILATION, change by which one sound becomes more dissimilar to some neighbouring sound. Compl. assimilation.

ERGATIVE, case inflection marking transitive subject (A) function – pp 266, 286ff, 294. Compl. absolutive.

EXCLUSIVE, non-singular first person pronoun, referring to speaker and one or more other people not including the addressee. Compl. inclusive.

FREE FORM, a form which can occur alone, and make up a complete utterance e.g. *dog*, *kick*, *red* in English. Compl. bound form.

FUNCTIONAL LOAD of a contrast, the extent to which the contrast is utilised within that language e.g. there are fewer pairs of words in English involving just an *s*/*z* contrast (as *dose*/*doze*) than there are with just a *t*/*d* contrast (as *ten*/*den*), so *s*/*z* is said to have a lower functional load.

GEMINATE, a doubled (consonant or vowel) sound e.g. the *tt* in Italian *fatto* 'done', in contrast with *fato* 'fate'.

GENITIVE, an affix marking possessor (often just alienable possessor, in Australian languages). Often functions as a derivational, rather than an inflectional, affix in Australian languages – see p 300.

HETERORGANIC, two sounds which have different places of articulation e.g. *m* and *d*, *l* and *g*. Compl. homorganic.

HOMORGANIC, two sounds which have the same place of articulation e.g. *m* and *b*, *n* and *d*, *ny* and *j*, *ŋ* and *g*, *l* and *d*, *r* and *n*, *y* and *j*. Compl. heterorganic.

IMPERATIVE, verb form used in a direct command. See Mood.

INALIENABLE possession, where the possessed has an inherent connection with the possessor, and cannot be given away. Covers part-whole relationships e.g. *my foot*, *your hair*, *the tree's bark*. In Australian languages kin relationships are generally classified under inalienable possession e.g. *my mother*, *your child*, *her husband*. Compl. alienable.

INCLUSIVE non-singular first person pronoun, referring to speaker and one or more other people who do include the addressee(s). Compl. exclusive.

INDICATIVE mood, generally used for factual statements (declarative sentences).

INFLECTION, an obligatory specification needed to form a word from a lexical stem. A noun generally takes an inflectional affix showing case and sometimes also gender and number; a verb generally takes an inflectional affix showing tense and/or aspect etc. See pp 266–70.

INSTRUMENTAL, case inflection marking the referent of the noun to which it is added as weapon, tool or material used in the activity described by the verb – p 299.

INTRANSITIVE clause, contains only one core noun phrase, which is in intransitive subject (S) function. Intransitive verb, verb which occurs in intransitive clauses. See pp 278, 285ff.

LANGUAGE$_1$, the everyday sense of language, used when people say that they speak a certain language. Several languages$_1$ are often in fact dialects of a single language$_2$ – see pp 33ff.

LANGUAGE$_2$, the technical sense of linguists; several forms of speech are said to be dialects of a single language$_2$ if they are mutually intelligible etc. – see pp 33ff.

LENITION, the replacement of a sound by another sound that has the same place of articulation but a weaker manner of articulation (involving less muscular tension). Typically, the replacement of a peripheral stop, *b* or *g*, by the peripheral semi-vowel *w*, or of a laminal stop, *j* or *dh*, by the laminal semi-vowel, *y*.

LEXICAL ITEM (= LEXEME), a dictionary entry; a lexical item may have a number of different grammatical forms e.g. *give, gave, given, giving* and also *gift, gifts* are different forms of a single lexical item – see p 97.

LOCATIVE, case inflection indicating position of rest at, on, in or near the referent of the noun or pronoun to which it is added – pp 296–7.

METATHESIS, a change whereby the order of two sounds (or forms) is reversed i.e. *-xy-* being replaced by *-yx-*.

MOOD, classification of sentences according to the speaker's attitude to what he is saying e.g. indicative (statement), imperative (command), subjunctive (doubt or uncertainty), interrogative (questioning), optative (wishing).

MORPHEME, the minimum meaningful unit of speech; can be a free or a bound form e.g. *un + tru + th + ful + ness* consists of one free morpheme, *tru(e)*, and four bound morphemes.

MORPHOLOGY, that part of grammar that studies the structure of words, in terms of their component morphemes. Compl. syntax.

NOMINAL, used in this book to cover noun and adjective classes, which typically have the same set of inflections (nominal inflections) in Australian languages.

NOMINATIVE, case inflection marking intransitive subject (S) and transitive subject (A) functions – pp 286ff. Compl. accusative.

NOUN PHRASE (NP), a word or group of words with noun or pronoun as head which can fill one (non-verbal) functional slot in a sentence, e.g. transitive subject, indirect object – pp 266ff.

PERFECT aspect, specifying that the clause refers to something that was completed before a certain time (but which still has relevance to the situation at that time).

PHONEME, the minimum segmental unit of phonology. Substituting one phoneme for another produces a different word, with a different meaning (or a nonsense word) e.g. *p*, *t* and *k* are seen to be distinct phonemes in English from *sip/sit/sick, spin/*stin/skin* etc. A phoneme is effectively a class of sounds (its allophones) which together function as a single structural unit in the phonology of that language. See pp 125–7, 132ff.

PHONETICS, articulatory and/or acoustic study of the sounds of speech – see pp 125–7.

PHONOLOGY, description of the phonetic contrasts that are used to distinguish between different words, in a particular language. It includes (a) setting up an appropriate system of phonemes for that language, and (b) stating the phonotactic patterns according to which these phonemes may be combined together to form syllables and words. See pp 125ff.

POLYSYNTHETIC, a language with elaborate word structures e.g. the verb may contain information about subject, object and indirect object, as well as specification for some of tense, aspect, mood, polarity (i.e. negation), and perhaps also an incorporated form of a nominal.

PREFIX, an affix that precedes a root or stem e.g. *un-* in *untrue*.

PROTO-LANGUAGE, putative single ancestor language for a group of modern languages that are held to be genetically related. The postulation of aspects of the grammar and lexicon of the proto-language, and demonstration of the systematic changes by which each modern language has evolved from it, constitute proof of genetic relationship.

PURPOSIVE, case inflection indicating that the referent of the noun or pronoun to which it is added is the goal of the activity – pp 297–8. Also: verbal inflection that can in many Australian languages occur on the verb in a main clause, indicating obligation, or on the verb of a subordinate clause, indicating that the event described by the subordinate clause is only possible by virtue of the event described by the main clause having already taken place – p 381.

RECIPROCAL, construction-type indicating that some or all of a group of participants did a certain action to some or all of the others e.g. *the men painted each other*; many Australian languages have a 'reciprocal' derivational affix to the verb.

REDUPLICATION, repetition of all or part of a lexical stem, carrying a semantic modification e.g. *mulari* 'initiated man', *mula+mulari* 'lots of initiated men' (Yidiny).

REFLEXIVE, construction-type indicating that Agent and Object are identical e.g. *he cut himself*. Australian languages typically have either a 'reflexive' derivational affix to the verb, or else reflexive pronoun(s).

RELATIVE CLAUSE, type of subordinate clause specifying some event or state in which one of the participants in the main clause is, or has been, involved. e.g. *who had laughed* in *I hit the man who had laughed.*

ROOT, an unanalysable lexical element e.g. *true* is the root on which *untruthfulness* is built. See p 268–70.

SEMANTICS, study of the meaning relations conveyed by the grammatical and lexical systems of a language.

STEM, the nucleus of a word, to which an inflectional affix is added, forming a word. A stem may consist of a single root, of two roots forming a compound stem, or of a root (or stem) and one or more derivational affixes forming a derived stem. See pp 268–70.

SUBGROUP, set of languages within a language family that descends from a single ancestor language, this being itself a descendant of the proto-language for the complete family (and spoken at a later period than the proto-language) – pp 251ff.

SUBORDINATE CLAUSE, a clause which modifies (some part of) the main clause, and is generally grammatically dependent on it e.g. complement clauses (*to go* in *I told him to go*), relative clauses etc.

SUFFIX, an affix that follows a root or stem e.g. *-ful* in *truthful.*

SYNCHRONIC DESCRIPTION, description of a language system at one point in time, without taking account of historical changes. Compl. diachronic.

SYNTAX, that part of grammar which studies the ways in which words are related together to form sentences. Compl. morphology.

TRANSITIVE CLAUSE, contains two core noun phrases, one in transitive subject (A) and the other in transitive object (O) function. Transitive verb, verb which occurs in transitive clauses. See pp 278, 285ff.

SUGGESTIONS FOR FURTHER READING

Each volume of the *Handbook of Australian languages* contains grammatical sketches of three or four languages, written in a standard format. The main points of phonology, morphology and syntax are described in a straightforward manner, avoiding excessive symbolisation and reference to theoretical models. The first volume was published in 1979 by the ANU press, Canberra and John Benjamins, Amsterdam; it consists of an Editors' Introduction (B. J. Blake and R. M. W. Dixon), Guugu Yimidhirr (John Haviland), Pitta-Pitta (B. J. Blake), Gumbaynggir (Diana Eades) and Yaygir (Terry Crowley). Further volumes will follow at roughly yearly intervals.

Anyone interested in teaching himself an Australian language is recommended to study Douglas 1964 on Western Desert (probably the language with the most speakers). Other recent grammars include Hudson 1978 on Walmatjari (Western Australia); Sharpe 1972 on Alawa; Capell and Hinch 1970 on Maung (both Northern Territory); Austin forthcoming on Diyari (South Australia); Blake 1979b on Kalkatungu; Dixon 1972 on Dyirbal; Dixon 1977a on Yidiny (all Queensland); Crowley 1978 on Banjalang; Donaldson 1980 on Ngiyambaa (both New South Wales), and Hercus 1969 on languages of Victoria. A useful survey of some important grammatical categories in a wide range of languages is provided by a volume of papers from a conference organised by the Australian Institute of Aboriginal Studies (Dixon 1976a). O'Grady 1966 and Hale 1964, 1976c give careful reconstructions over subgroups of modern languages.

The five regional bibliographies by Craig 1966–70 are generally of a high standard (although there are a few errors and omissions). The continent-wide bibliography of Greenway 1963 includes much useful information but has many errors and inconsistencies.

Maddock 1974, Berndt and Berndt 1967 and Elkin 1954 can be recommended as good introductions to the anthropological study of Aboriginal Australians. Mulvaney 1975 is a useful introduction to Australian prehistory.

The textbooks by Fromkin and Rodman 1978 and Langacker 1973 provide good introductions to the principles of linguistics. Lyons 1968 is particularly recommended for critical discussion of basic terms and ideas.

The Institute for Aboriginal Development (P.O. Box 2531, Alice Springs, N.T., 5750) has produced language learning courses, consisting of cassettes and accompanying written materials, on Pitjantjatjara, Pintupi, Warlpiri, Western Aranda and Eastern Aranda.

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